ADMINISTRATION REPORT

OF THE

INDIAN STORES DEPARTMENT

FOR THE YEAR

1931-32

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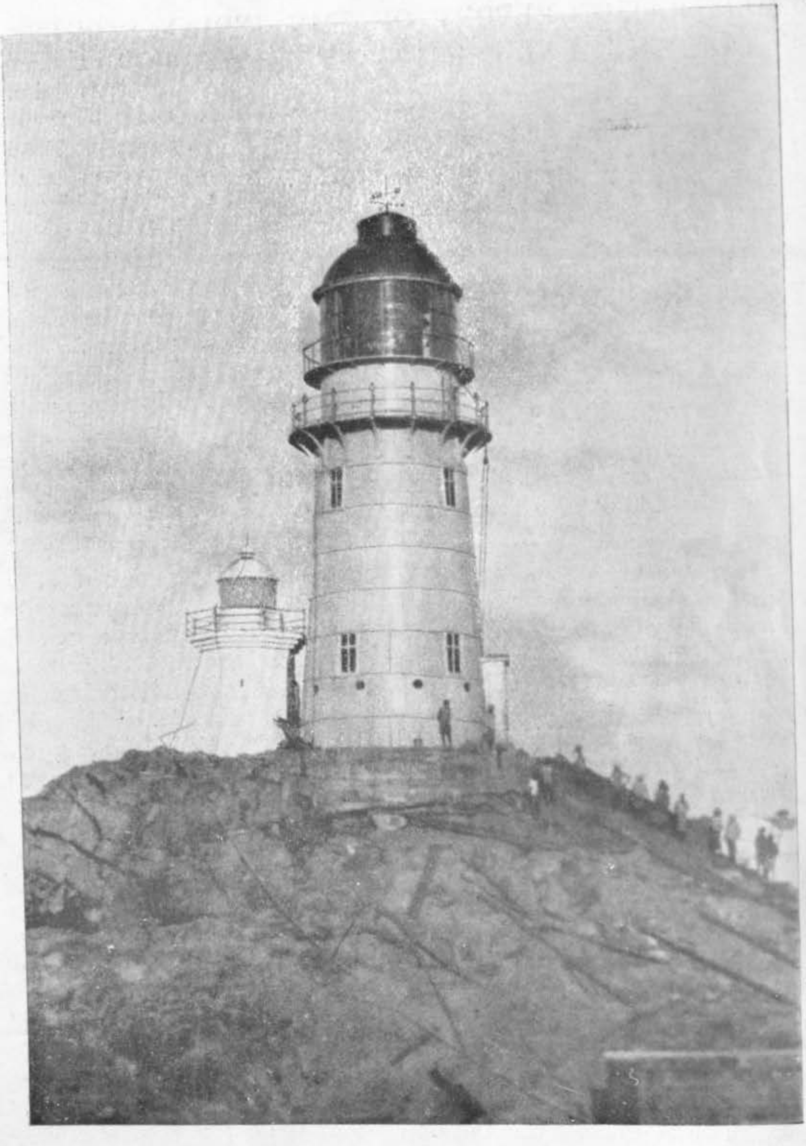
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VENGURLA ROCKS LIGHTHOUSE.
New Tower, Lantern and Optical Apparatus erected in 1932.
(*Vide* paragraph 26.)

ADMINISTRATION REPORT OF THE INDIAN STORES DEPARTMENT FOR THE YEAR 1931-32.

CHAPTER I.

SUMMARY.

1. *General.*—The year under review was one of world-wide financial stress and trade depression. The rigorous curtailment of work and activities of spending departments imposed by these conditions had its direct reaction on the turnover of the Department. Another factor which contributed to the reduction in the turnover was the unprecedented low level in commodity prices which in some cases receded to below pre-war rates.

2. *Activities of the Purchase Branch.*—The number of orders placed during the year increased from 33,311 to 34,928, but their value decreased from Rs. 3,76,82,696 to Rs. 3,60,00,006 (*vide* paragraph 17), or a reduction of 4·4%.

3. *Activities of the Inspection Branch.*—The value and tonnage of stores inspected during the year amounted to Rs. 4,84,21,867 and tons 310,504, as compared with Rs. 6,61,19,542 and tons 328,020 during the year 1930-31, showing a reduction of 26·8% and 5·3% respectively. The number of tests and analyses carried out at the laboratories of the Metallurgical Inspectorate and the Government Test Houses at Calcutta and Bombay amounted to 14,401, against 16,256 in the preceding year. The large reduction in the value of stores inspected was caused, as explained in paragraph 45, by a diminution in the demands for Rolling stock and bridge and structural work received from Railway Administrations. Further details of the work of the Inspection Branch will be found in Chapters IV, V and VI.

4. *Utilisation of the services of the Indian Stores Department by Government Departments in India.*—It was recorded in paragraph 2 of the Administration Report for the previous year that orders had been issued by the Home, Commerce, Foreign and Political and Industries and Labour Departments to all minor Local Administrations and to the Central Departments under their direct control, that the purchase of their requirements of all classes of stores handled by the Indian Stores Department should in future be entrusted invariably to that Department. Similar orders were issued during the year under review by the Finance Department to the Auditor General and the Central Board of Revenue, by the Department of Industries and Labour to the Private Secretary and Military Secretary to His Excellency the Viceroy, and by the Department of Education, Health and Lands to the officers under their control. The Imperial Council of Agricultural Research, the Legislative Department and the Legislative Assembly Department also agreed to obtain their requirements through the Stores Department and the Railway Department made substantial additions to the list of stores the purchase of which is entrusted to the Department.

5. *The operation of the Rupee Tender System.*—It will be recalled that in December 1929 the Government of India promulgated new Rules for the supply of articles required to be purchased for the public service. In the Resolution under which those Rules were issued it was stated that the Rules would have effect from 1st January 1931, the intention being to permit of supplying firms both in India and abroad adapting their organisations to meet the conditions which the new Rules imposed. Purchasing authorities were, however, permitted at their discretion to anticipate this date and the Indian Stores Department did in fact commence straightaway to make purchases in regard to certain classes of stores in the terms of the new Rules. But it was not until the year under review that in collaboration with its indenting authorities the Department was able to take full advantage of the liberty to purchase in India which the Rules afforded. Similar Rules had been adopted by the Governments of Bombay, Madras, Central Provinces and Assam during the year 1930-31 and during the year under review by the Government of Bihar and Orissa.

The arrangement arrived at with the Master General of Ordnance, which was recorded in paragraph 22 of the Report for 1930-31, that for the future, stores previously purchased abroad for the Army by the Director General of Stores, London, shall, when purchase is to be made in India under the terms of the new Stores Rules, be purchased through the agency of the Indian Stores Department, and the transfer of several new items of stores by the Railway Department to the Indian Stores Department (*vide* paragraph 22) have resulted in considerable augmentation in the value of certain classes of stores purchased during the year. The statement below shows the major items of demands from various indenting authorities which were formerly purchased from abroad, but were purchased in India during the year under review by Rupee Tender :—

	Rs.
Textiles	22,50,000
Motor vehicles and spares	17,50,000
Wheels and Axles	3,08,500
Boiler Tubes	1,75,700
Transport Flat and Ferry Staging	1,56,800
Lighthouse equipment	1,02,000
Electrical equipment for Telegraph Department	1,01,400
Total	48,44,400

Numerous contracts were placed in India direct with manufacturers and suppliers abroad and no difficulties were experienced in negotiating these contracts or in their satisfactory execution.

6. *Indents on the India Store Department, London.*—As a result of the introduction of the Rupee Tender Rules, and of the general reduction in demands, there was a further reduction in the number and value of indents on the London Stores Department which were examined during the year. There was, however, even larger reduction in the value of items challenged as a result of the examination and it is gratifying to note that the Rules for the supply of articles required to be purchased for the public service were carefully observed by all indenting authorities.

The following statement shows the results of the examination of indents during the years 1928-29 to 1931-32 :—

Year.	No. of indents examined.	Value of indents examined.	Value of items challenged.	Percentage of the value of items challenged to total value of indents.
		Rs.	Rs.	
1928-29	1,533	6,28,85,361	10,41,133	1·7
1929-30	1,414	3,16,06,941	14,95,803	4·7
1930-31	1,165	2,83,80,217	14,82,188	5·2
1931-32	915	93,84,301	3,94,293	4·2

7. *Utilisation of the services of the Indian Stores Department by authorities outside India.*—As in the past, the services of the Department were utilised by the Resident Engineer, Royal Airship Base, Karachi, for the purchase and inspection of stores. Tents were inspected at Cawnpore on behalf of the Palestine Government and a large tonnage of cast iron pipes and specials was inspected by the Controller of Inspection, Calcutta Circle, on behalf of the Singapore Municipality. The Comptroller of Stores, Western Australian Government Railways and Tramways, Fremantle, utilised the services of the Bombay Inspection Circle for the inspection of cotton waste.

8. *Financial position.*—The final accounts of the receipts and expenditure of the Department for the year 1931-32 are not at present available, but a provisional account has been prepared by the Audit Officer, Indian Stores Department, and included in Appendix XVII.

The scheme of separating the expenditure connected with the non-commercial activities of the Department from its purely commercial operations, referred to in paragraph 8 of the last report, was worked out, in consultation with the Audit Officer, Indian Stores Department, and the Director of Commercial Audit. The financial statement has been split up into (*i*) Commercial and (*ii*) Non-Commercial parts in accordance with the decisions arrived at. It has been found that approximately one-fifth of the expenditure of the Department is devoted to non-commercial activities and about one-third of the assumed loss on its working is attributable to those activities.

A complete statement of the work done and fees earned by the Department, year by year, since its constitution, will be found in Appendix XVIII.

9. *Organisation of the Indian Stores Department and procedure in force.*—A brief description of the organisation of the Department, with hints for the guidance of indenting authorities, will be found in Appendix I to this Report. Full details are given in a pamphlet copies of which can be obtained free of charge on application to the Chief Controller of Stores.

CHAPTER II.

ORGANISATION.

10. *Changes in Organisation.*—No expansion of the organisation of the Department was necessary during the year under review owing to the general financial stringency. In pursuance of the general retrenchment scheme the scope, functions and costs of the Department were reviewed first by a special Retrenchment Officer and later by the Stores, Printing and Stationery Sub-Committee of the Retrenchment Advisory Committee appointed by the Government of India. All possible sources of retrenchment were explored in close consultation with the special Retrenchment Officer and the Sub-Committee and a substantial reduction was made in the expenditure of the Department.

The Retrenchment Sub-Committee submitted an Interim Report in September 1931, suggesting a total immediate saving of Rs. 2,53,102 on the annual expenditure of the Department. Their final report is still awaited, but in the meantime effect has been given to most of the proposals made in the Interim Report and savings exceeding those estimated by the Committee have been secured.

As a result of these measures the post of Director of Purchase has been abolished and the post of Director of Inspection held in abeyance. The reduction of these two principal posts in the Department was rendered possible only by the transfer of the burden of detailed supervision of the Purchase and Inspection Branches of the Department as a makeshift to the Head of the Department. One post of Assistant Director of Purchase was abolished from the Headquarters office. Four posts of Assistant Engineers (Inspection) and one post of Probationary Assistant Engineer were reduced from the cadre of the Inspection Branch. The charge of the Bombay Inspection Circle was reconverted to the status of an Assistant Controllership and the Upper India Inspection Circle was placed in the charge of a junior officer of the rank of Assistant Engineer. The Government Test House at Bombay was closed down with effect from the 20th October 1931, resulting in the saving of three technical, one clerical and one inferior posts in the cadre of the Inspection Branch and consequential savings in expenditure on supplies, services and contingencies. In the Headquarters office twenty-one posts from the clerical establishment, one post of tracer and five posts of inferior servants were given up. Five clerical posts were reduced in the Provincial Purchase Circles, and 16 technical, 10 clerical and 9 inferior posts were given up or held in abeyance in the Inspection Circles, the Tests House, Alipore, and the Metallurgical Inspectorate.

These drastic cuts, some of which were introduced after the expiry of the year under review, have amounted to Rs. 3,00,000 per annum approximately, on the basis of average costs. A reduction in the volume of work devolving on the Department was inevitable as a result of the general trade depression and depletion of the stores and works grants of consuming departments. As normal conditions return the restoration of some, if not all, of these appointments will be necessary in order to maintain a reasonable standard of efficiency in the Department.

11. *Organisation of the Department at the end of the year.*—A conspectus of the organisation as it stood at the end of the year will be found in Appendix II.

12. *Important changes in personnel.*—In pursuance of the decision to abolish the post of Director of Purchase, the services of Lieutenant-Colonel H. M. Alexander were replaced at the disposal of the Army Department with effect from the 28th October 1931, preparatory to retirement.

13. *Technical Training.*—One of the two probationers selected for training during the preceding year, of whom mention was made in paragraph 14 of the Report for 1930-31, failed to make satisfactory progress and his course of training was discontinued in December 1931. As a measure of retrenchment no candidate was selected to replace him. The second candidate, who was selected to undergo training in the inspection of Rolling stock and Engineering supplies for an initial period of one year made the fullest use of the opportunities afforded to him and his period of training was extended by another year.

Arrangements were made during the year, through the High Commissioner for India, for the grant of facilities to two junior officers of the Inspection Branch, to visit, during a portion of their leave, some of the important engineering and hydro-electric works in Great Britain, in order to enable them to acquire up-to-date knowledge of the processes of manufacture of engineering equipment and of recent developments in hydro-electric practice.

14. *Recruitment of the Gazetted Staff.*—During the year under review two new Indian officers were recruited for the Inspection Branch of the Department. Four European officers left the Department during the year in connection with the retrenchment scheme and one Indian Probationer was discharged as explained in paragraph 13.

15. *Numbers of European and Indian officers in the Department.*—There was a further marked improvement during the year under review in the proportion of Indian officers in the Superior Staff of the Department. 41 out of 67 officers employed in the Department on the 31st March 1932 were Indians and only 26 were non-Indians, as against 40 Indians and 30 non-Indians on the 31st March 1931.

The progress of Indianisation and the proportion of Indians and non-Indians in the Gazetted ranks of the Department at various stages since the constitution of the Department in 1922 are shown in the graph in Appendix III.

16. *Recruitment of the Subordinate Technical staff.*—No recruitment was made to the subordinate technical staff during the year. On the other hand four Examiners of Stores, three chemical Assistants and one Physical Assistant left the Department.

CHAPTER III.

WORK OF THE PURCHASE BRANCH.

17. *General.*—The financial year 1931-32 covers a period which has few parallels. The economic depression which persisted during the preceding year steadily deepened and the financial crisis of September 1931 served to mark the seriousness of the position in the world's markets. New low record prices have been reached for many commodities and, moreover, owing to the general scarcity of business offering, producers and manufacturers were forced to offer their goods at prices the level of which has not been experienced for many years. The seriousness of the financial stringency imposed upon Government generally, and upon consuming departments in particular, the necessity of rigorous retrenchment and strict economy, and it followed inevitably that the financial results of the operations of the Indian Stores Department during this period should suffer from these influences. The total value of orders placed by the Department during the year amounted to Rs. 3,60,00,006 as compared with Rs. 3,76,82,696 during 1930-31. There was thus a decline of 4·4 per cent. amounting to Rs. 16,82,690. This percentage does not represent the full extent of the fall in the level of prices generally as compared with the preceding year ; nor does it approximate to the extent to which certain consuming departments were compelled by the need for economy to reduce the volume of their demands. It will thus be appreciated that in achieving the result recorded for the year under review the Department has shown a considerable extension of new business, although the financial effect of the work done has been so seriously handicapped by the circumstances referred to. The number of indents received during the year totalled 28,259 as compared with 23,233 during the preceding year and the total number of contracts placed amounted to 34,928 against 33,311 placed during 1930-31. The number of items dealt with declined from 67,224, to 61,657. This reduction was due to the elimination of a large number of petty demands which had formerly been placed on the Provincial Purchase Circles. On the other hand, the number of items dealt with in the Headquarters office which deals with all important demands increased from 25,091 to 30,168. An analysis of the statistics of indents, items and orders for the year under review in comparison with those of the two preceding years is given in the table below :—

Organisation.	No. of indents received.			No. of items in the indents received.			No. of orders placed.		
	1929-30	1930-31	1931-32	1929-30	1930-31	1931-32	1929-30	1930-31	1931-32
Calcutta Circle	4,416	6,073	5,600	19,687	18,855	15,056	8,573	9,217	7,180
Bombay Circle	2,051	2,644	2,450	8,024	10,355	9,411	3,905	5,138	4,763
Karachi Circle	2,214	2,452	1,904	16,737	12,923	7,022	6,434	5,528	3,593
Total Provincial Circles	8,681	11,169	9,954	44,448	42,133	31,489	18,912	19,883	15,536
Headquarters Office.	8,377	12,064	18,305	24,509	25,091	30,168	10,855	13,428	19,392
Grand Total	17,058	23,233	28,259	68,957	67,224	61,657	29,767	33,311	34,928

Details of the values of orders placed will be found in Appendices IV to VII.

18. *Clientele of the Department.*—The year 1931-32 records further additions to the list of indentors who utilised the services of the Department for the first time. These additions amounted to fortyone and the value of orders placed on their behalf was Rs. 1,14,525 distributed as follows :—

	No.	Amount.
		Rs.
(1) Central Departments (Civil, Military and Railways) ..	23	82,463
(2) Provincial Governments	6	8,930
(3) Indian States and Quasi-public bodies	12	23,132
Total ..	41	1,14,525

The Departments which chiefly contributed to this amount were :—

	Rs.
(1) Police Department, Baluchistan	33,426
(2) Vizagapatam Harbour Construction	20,092
(3) Municipal Committee, Bellary	9,424
(4) Marine Department, Madras	7,926
(5) Calcutta Chord Railway	6,845
(6) Police Department, Ajmer-Merwara	6,382

19. *Variations in demands.*—The following statement shows the fluctuations in the value of orders placed on behalf of various authorities as compared with the corresponding figures of the preceding years :—

Indenting authorities.	Value of orders placed during 1931-32.	Value of orders placed during 1930-31.	Increase + Reduction—	Percentage. Increase + Reduction—
Central—Army ..	1,38,23,488	1,05,28,210	+32,95,278	+31%
Central—Civil ..	38,94,415	72,26,671	—33,32,256	—47%
Railways—State-worked	1,18,08,062	1,17,08,048	+1,00,014	+·8%
Railways—Company-worked.	7,87,189	10,83,001	—2,95,814	—27%
Railways—Indian State-worked.	18,801	6,793	+12,008	+177%
Total Railways ..	1,26,14,052	1,27,97,842	—1,83,790	—1·4%
Provincial Governments	52,89,998	62,48,110	—9,58,112	—15%
Indian States ..	1,57,343	7,53,778	—5,96,435	—79%
Quasi-Public Bodies ..	2,18,627	1,24,269	+94,358	76%
British Government ..	2,083	3,816	—1,733	—45%
GRAND TOTAL ..	3,60,00,006	3,76,82,696	—16,82,690	—4·4%

20. *Purchases on behalf of the Civil Departments of the Central Government.*—There was a serious decline in the value of demands received from the Civil Departments of the Central Government. As compared with the preceding year the reduction amounted to the large sum of Rs. 33,32,000. This diminution was chiefly due to the curtailment of demands owing to the financial stringency. The demands received from the Posts and Telegraphs Department were less by Rs. 19,54,000 than the value of demands received during

the preceding year. Of this sum Rs. 1,81,000 represents the reduction in the value of textiles for uniforms and Rs. 17,73,000 is accounted for by the decline in the value of engineering and miscellaneous stores indented for. A heavy reduction of Rs. 6,38,000 was recorded in the value of stores demanded by the Central Public Works Department. The value of work undertaken for the Department of Civil Aviation showed a fall of Rs. 1,51,000 and in practically every other Civil department under the Central Government reductions in the value of their demands have to be recorded. Even allowing for the substantial drop in prices which occurred during the year, it will be appreciated that very heavy economies were effected by consuming departments which reacted considerably on the purchase operations of the Department.

21. *Purchases on behalf of the Military Department.*—The Purchase Co-ordinating Committee referred to in the last year's report continued to meet regularly throughout the year. It cannot be claimed that the work of the Committee has so far resulted in the transference to the Department of any appreciable volume of purchase work which has hitherto been carried out in India by the purchasing agency of the Army and to a large extent the position still is that both the Indian Stores Department and the purchasing organisation of the Army are purchasing similar classes of stores in the same markets. The decision, however, recorded in last year's report that the Department for the future should be entrusted with the purchase in India of certain classes of stores which hitherto have been purchased in London by the Director General of Stores has resulted in a considerable increase in the value of stores purchased in India for the Army. The purchases on behalf of the Quartermaster General's Branch increased by Rs. 18,98,000, the increase being almost entirely accounted for by the purchase in India of Mechanical Transport vehicles and spare parts which under the Stores Rules previously in force were obtained by indent on the Director General of Stores, London. For the Master General of Ordnance Branch purchases increased in value by Rs. 34,50,000. This increase was due partly to the purchase in India by the Department of textile stores which are not manufactured in India and which hitherto had been purchased abroad, and partly to the fact that in a number of instances the demands for textiles from the Army increased in volume. On the other hand, purchases on behalf of the Military Engineer Services declined by Rs. 15,54,000, presumably as a result of the curtailment of works programmes and other economy measures. The value of demands received from the Royal Indian Marine showed a reduction of Rs. 5,32,000.

22. *Purchases on behalf of Railway Administrations.*—Meetings with the Railway Department (Railway Board) were continued during the year and as a result of the meetings which were held in May 1931 and March 1932, the following items were added to the list of requirements of Railway Administrations the purchase of which for the future will be carried out by the Indian Stores Department :—

Indian Railway Standard plate girder spans, complete, for bridges.

Steel Sections, *i.e.*, angles, bars, beams, channels, plates, rounds, squares, tees, etc.,

Carriage roofing material such as Malthoid, Ruberoid and similar materials.

Fireclay.

Sheets, asbestos and cement, including sheets and fittings, etc.

Mechanical plant and equipment :—

Pumping plant.

Lifts, electric.

Ropes, wire, of all kinds.

Columns, water ; Meters, water ; Tanks, cast iron, mild steel and pressed steel, including staging where necessary.

Brushes of various kinds.

Screws, wood.

Antimony.

Wood preservatives of all kinds.

Calcium carbide.

Dissolved acetylene gas.

Poles, steel, for overhead lines, excluding poles for electric traction purposes.

Telephone and Telegraph apparatus, excluding block instruments and fittings.

The full effect of these additions is not reflected in the returns for the year under review owing to the fact that in many cases current contracts entered into by Railway Administrations had not completed their tenure. It is satisfactory to be able to report that in spite of the continued fall in market prices and of the rigorous retrenchments effected by the Railway Administrations the decline in the value of purchases effected for the Railways as a whole amounted to only Rs. 1,83,000. But for the continued support and co-operation of the Railway Board, as is evidenced by the steady transference of purchase work to the Indian Stores Department, this drop would, of course, have been much greater and it will be appreciated that allowing for the decrease in purchase prices a much greater volume of work was undertaken during the year. The purchases made for the Great Indian Peninsula Railway, the Eastern Bengal Railway and the Mysore Railways increased by Rs. 14,51,000 but those made on behalf of the East Indian, North Western, Burma, Assam Bengal, South India and Madras and Southern Mahratta Railways declined by Rs. 16,31,000. As the total purchases made for Railway Administrations did not exceed the limit of Rs. 1,75,00,000 the sliding scale of charges sanctioned by the Government of India in 1928 did not become operative and the rebate which is allowed when purchases exceed this figure could not be brought into effect.

23. *Purchases on behalf of major Local Governments.*—The total value of stores purchased on behalf of major Local Governments amounted to Rs. 52,89,998 against Rs. 62,48,110 during the previous year. The value of demands received from the Governments of Madras, Bombay, United Provinces, Punjab, Bihar and Orissa and Central Provinces showed a decrease of about 13¼ lakhs, while those from the Governments of Bengal, Burma and Assam increased by about 3¾ lakhs. Heavy decreases have to be recorded with respect to the textile purchases carried out for the Governments of Madras,

Bombay and the Punjab. This decline accounted for a reduction of Rs. 4,87,000 and was due to a falling off in indents for textile stores requisitioned for the Police and Jail Departments. The diminutions were chiefly due to economy measures and partly to the fall in market prices. On the other hand, during the year under review substantial demands were received from the Police Department and the Jail Department of the Government of Bengal for the first time with the result that textile purchases for that Government increased by Rs. 2,21,000. Similarly, the Assam Police purchased through the Department a larger volume of its textile requirements which resulted in an increase of Rs. 82,000. The purchases of engineering stores on behalf of the Governments of Madras, Bombay, United Provinces, Punjab, Bihar and Orissa and Central Provinces shrank in value by Rs. 8,00,000 as compared with the figures for the preceding year. The value of indents for engineering stores received from the Lloyd Barrage and Canals Construction Scheme, under the Government of Bombay, declined by Rs. 3,99,000 as a result of the completion of the project. The demands for such stores from the Madras Public Works Department, declined by Rs. 1,63,000 and those from the Punjab Public Works Department by Rs. 8,60,000 but this fall was more than compensated for by the increase in value of demands received from the Hydro-Electric Branch of that Department which amounted to Rs. 9,09,000. There was also a satisfactory increase in business from the Public Works Department, Bengal, which has commenced to make greater use of the Department's services and during the year an increase in value of Rs. 87,000 was shown. There has been generally a marked extension of the utilisation of the Department's annual Rate and Running contracts by district officers all over India. But for this fact it would have been necessary to record a more serious falling off in the volume of business transacted.

24. *Effect of drop in prices on the turnover of the Department.*—The following statement shows the drop in average prices of some of the more important items of stores handled by the Headquarters office of the Department as compared with those paid during the two preceding years. Consideration of these figures will disclose how the turnover of the Department is materially affected by market price movements:—

Name of Article.	Unit.	Average price paid.			Percentage of fall in price since 1929-30.
		1929-30.	1930-31.	1931-32.	
		Rs. a. p.	Rs. a. p.	Rs. a. p.	
Textile Stores.					
Drill, khaki	Yd.	0 9 0 less $1\frac{3}{4}$ %	0 8 2 less $1\frac{3}{4}$ %	0 6 9 less $1\frac{3}{4}$ %	25
Drill, blue, me ium	,,	0 7 9	0 5 6	0 5 2	33·3
Drill, ble ched	,,	0 7 4	0 6 0	0 5 9	23·9
Sheets, barrack	Each	1 7 0	1 6 10	1 2 4	20·4
Durries, Army 6′ × 3′ ..	,,	2 2 3	1 6 7	1 2 9	45·3
Serge, blue, medium	Yd.	2 4 0	2 1 0	1 15 6	12·5
Great-coat cloth (imported) ..	,,	4 10 6	4 10 6	4 6 0	6·1
Great-coat cloth (indigenous) ..	,,	5 10 9	5 9 0	4 10 0	18·5
Paulins, flax (Railways) ..	Sq.yd.	2 1 6	2 1 6	1 7 9	29·1

Name of Article.	Unit.	Average price paid. 1929-30.	1930-31.	1931-32.	Percentage of fall in price since 1929-30.
		Rs. a. p.	Rs. a. p.	Rs. a. p.	
Miscellaneous Stores.					
Oil, lubricating, castor ..	Cwt.	22 1 0	20 11 0	14 5 6	35·1
Oil, cylinder, ordinary ..	Gal.	1 1 6	1 5 10	0 13 0	25·7
Oil, cylinder, superheat ..	,,	1 4 0	1 10 9	1 1 4	13·3
Creosote, loaded in Tank wagons	Cwt.	8 8 0	..	6 0 0	29·1
Paint, white lead, genuine, stiff	,,	32 8 0	29 0 0	26 4 0	19·2
Paint, red oxide, stiff ..	,,	9 14 0	13 8 0	9 4 0	6·3
Coal tar for painting purposes	Gal.	0 14 0	0 14 0	0 11 6	17·9
Varnish, body, hard, drying, undercoating (outside) ..	,,	6 2 0	5 6 0	4 14 0	20·4
Varnish, body, pale, finishing (outside)	,,	7 4 0	6 8 0	5 7 0	25
Linseed oil, raw	,,	1 15 5	2 7 0	1 11 9	22·3
Linseed oil, double boiled ..	,,	2 1 0	2 9 0	1 12 9	12·9
Turpentine, genuine ..	,,	2 14 6	2 9 11	2 6 0	16·3
Turpentine, substitute ..	,,	1 9 0	1 9 0	1 7 0	8
Shellac	Cwt.	141 8 0	115 14 0	98 15 0	30·1
Cement	Ton.	54 6 0	54 6 0	51 10 0	5·1
Soap, soft	Cwt.	13 12 0	12 14 0	11 12 0	10·5
Soap, bar	,,	22 6 0	21 6 0	17 8 0	21·8

25. *Purchase of textiles and leathergoods.*—The total value of purchases made during the year under this head amounted to Rs. 1,06,14,978 as against Rs. 98,37,157 during the year 1930-31. The purchases comprised :—

	1931-32.	1930-31.	Percentage of increase or decrease.
	Rs.	Rs.	
Cotton goods	50,28,899	53,93,784	—7
Woollen goods	42,58,917	36,57,331	+16½
Jute, hemp, flax and miscellaneous textile stores	12,09,474	7,13,641	+69
Leather goods	1,17,688	72,401	+64
Total—Textiles and Leather ..	1,06,14,978	98,37,157	+8

Since the year 1923-24 the purchase of textile stores for the Army has steadily declined year by year until 1930-31 when they totalled only Rs. 34,94,398. During 1931-32 the total reached Rs. 69,67,846, *i.e.*, nearly double the amount recorded for the preceding year. The chief reason for the increase was the fact that a large quantity of stores which in the past had been purchased in

London by the Director General of Stores was bought in India by Rupee Tender under the new Stores Purchase Rules. The increase on this account amounted to Rs. 22½ lakhs. A further increase of Rs. 12 lakhs is due to demands for certain Army textiles having been received for larger quantities.

The following stores which were formerly purchased abroad were for the first time bought in India :—

Boots, gum, trench.
Canvas, flax, khaki, green, rot-proof, water-proof, " C " grade, etc.
Cloth, scarlet.
Coats, waterproof, vulcanised.
Cord, Bedford, drab, mixture.
Drawers, cotton, knitted, brown.
Drill, cotton, drab, dark.
Flannel, silver grey.
Flannel, white.
Hats, felt, Gurkha.
Haversacks, W. E. pattern.
Leggings, waterproof, vulcanised.
Linen, brown.
Mosquito netting.
Pugries, helmet, khaki.
Putties, Service Dress.
Serge, Miscellaneous.
Serge, Service Dress.
Sewing cotton.
Waterproof sheeting, light and thin.
Web components and equipments.
Whipcord, drab, mixture.

There was a very considerable falling off in the value of indents for textile stores received from the State Railways. Whereas during 1930-31 the value of these purchases amounted to Rs. 36,53,149, they fell during the year under review to Rs. 16,66,737, *i.e.*, the decrease amounted to no less than 54 per cent. This fall to a large extent was due to the economy measures adopted by the Railway Administrations in restricting the issues of uniform clothing and in limiting the issues of consumable stores to the barest minima. There was also a serious decrease in the value of indents received from the Posts and Telegraphs Department. This decrease amounted to 42 per cent. for, whereas in 1930-31 the value of demands amounted to Rs. 4,34,886, it shrank during 1931-32 to Rs. 2,53,515.

The value of purchases arranged for the major Local Governments declined from Rs. 13,10,875 in 1930-31 to Rs. 10,87,162, *i.e.*, a decrease of 17 per cent.

Mention has already been made in paragraph 23 of the decreased demands received from the Police and Jail Departments of the Madras, Bombay and

Punjab Governments, but these decreases were partly balanced by increased purchases made on behalf of Bengal and Assam.

The statement given in Appendix VI shows a comparison of the values and percentages of indigenous and imported textile stores purchased during the year and the three preceding years. For the year under review it will be seen that there is a marked change in the percentage of indigenous textiles purchased as compared with the results recorded for the previous year. During 1930-31, 95 per cent. of the textiles purchased were either manufactured entirely in India from Indian material or were manufatured in India from imported material. The percentage for this year has dropped to 74·1 per cent. and the percentage of imported stores has risen from 5 per cent. to 25·9 per cent. The reason for this will be found in the reference which has already been made to the purchase in India of stores which are not at present produced in India and which hitherto were purchased from abroad by the Director-General of Stores, London. But, it will be found that, after deducting the value of imported textiles purchased in India for the first time, the comparison remains practically unchanged, *i.e.*, the value of indigenous stores purchased equals 94·2 per cent. and that of imported stores 5·8 per cent.

During the year endeavours were maintained to secure the production in India of materials which had hitherto been purchased abroad and the Department was successful in placing contracts with Indian manufacturers for the following items :—

Pugri cloth, khaki (Army standard).

Pugries, helmet, khaki.

Hoods, waterproof.

Lace for uniform trimmings.

As will be seen from paragraph 24 the decline in the market prices of textiles continued ; but for this factor a much greater increase in the value of textile stores purchased would have been recorded.

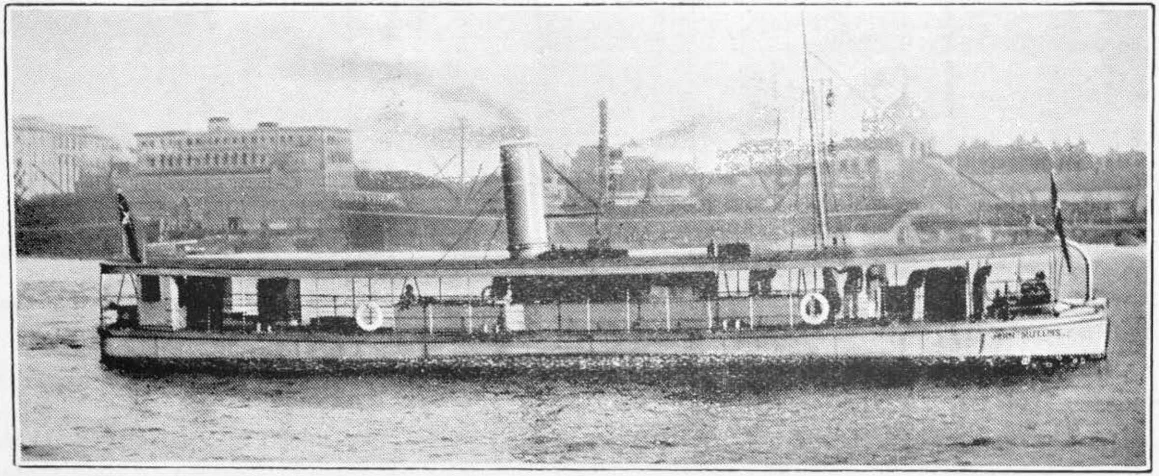
26. *Purchase of Engineering, Hardware and Miscellaneous Stores.*—The total value of purchases of engineering, hardware and miscellaneous stores amounted during 1931-32 to Rs. 2,53,85,028 as against Rs. 2,78,45,539 during the year 1930-31, *i.e.*, a decrease of Rs. 24,60,511 or 8·8 per cent. Here again, the decrease is attributable to the general diminution in indents received and to the reduction in selling rates. Indents received from the Quarter Master General's Branch, the Controller of Printing, Stationery and Stamps, the Resident, Persian Gulf, Public Works Department, Rajputana, the Engineer and Harbour Master, Port Blair, North Western Railway, Eastern Bengal Railway, East Indian Railway, Great Indian Peninsula Railway, South Indian Railway, The Nizam's Guaranteed State Railway, Public Works Department, Bengal, The Hydro-Electric Branch, Punjab Public Works Department, and the City Board, Mussoorie, increased by substantial amounts, the total increase aggregating Rs. 57,53,000. There was, however, a fall amounting in all to Rs. 75,73,000 in the demands received from the Master General of Ordnance, Military Engineer Services, Royal Indian Marine, Posts and Telegraphs Department, Central Public Works Department, Civil Aviation Department,

Mercantile Marine, The Burma Railways, Madras and Southern Mahratta Railway, Madras Public Works Department, Lloyd Barrage and Canals Construction Scheme, Public Works Departments. Punjab, and North-West Frontier Province, and Jaipur State. The increase in the value of demands received from the Quarter Master General's Branch was due to the purchase of motor vehicles and spare parts to the extent of Rs. 17½ lakhs. This purchase was made in India for the first time under the operation of the new Stores Rules. Save in the case of the Burma and Madras and Southern Mahratta Railways, every Railway Administration utilising the services of the Department purchased through its agency a greater volume of Engineering stores and this increase amounted in the aggregate to Rs. 36,89,000. This addition occurred in spite of the rigorous curtailment in the expenditure of stores which was exercised and is due to the fact that a greater variety of materials were purchased, as a result of the Railway Board's decision to transfer to the Department the purchase of additional classes of stores mentioned in paragraph 22. Demands from the Military Engineer Services decreased in value by Rs. 15,37,000 and from the Central Public Works Department by Rs. 6,28,000.

It will be readily understood that owing to financial stringency and consequently the necessity for rigorous retrenchment, expenditure on engineering projects in particular was strictly controlled throughout the year. Nevertheless a number of important contracts were made among which may be mentioned :—

	Rs.
(1) Transmission Lines for the distribution of electrical energy for the Punjab Hydro-Electric Scheme	10,12,652
(2) Tyres and Axles for State Railways	3,08,519
(3) Structural Steelwork for the Punjab Hydro-Electric Scheme ..	2,24,240
(4) Boiler Tubes for State Railways	1,75,724
(5) Transport Flat and Ferry Staging for Burma Railways	1,56,831
(6) Steelwork for Royal Air Force Headquarters at Karachi and Peshawar	1,09,903
(7) Hydro-Electric Power Pipe Line for the City Board, Mussoorie ..	1,04,000
(8) Air Lift Pumping Plant for Military Engineer Services	1,01,900

It is noteworthy that the contract for the fabrication of the Transport Flat and the Ferry Staging for the Burma Railways was awarded to a firm established in Burma for manufacture in their Rangoon Workshops. The orders for a ferry steamer for Burma Railways amounting to Rs. 4,20,000 and for the steam tugs for Godavari river for the Public Works Department, Madras, amounting to Rs. 1,63,938, a mention of which was made in paragraph 27 of the Administration Report for 1930-31, were completed during the year under review. An illustration of one of the steam tugs faces this page. The order for a tower lantern and first order optical apparatus for the Vengurla Rocks lighthouse, costing Rs. 1,47,220, placed during 1930-31, was also satisfactorily completed during the year under review, and an illustration of the equipment in actual position faces the frontispiece. Another order for a tower lantern and second order optical apparatus for the Jaigarh lighthouse was placed during the year at a cost of Rs. 1,02,000.



Twin Screw Launch—" John Mullins " built for the Madras Government.
(*Vide* paragraph 26.)

Although of necessity a large proportion of the engineering stores purchased was of foreign origin encouragement was offered, where possible, to the development of manufacture in India. Train lighting couplers, hitherto mainly imported from abroad, were produced in accordance with the specification by a Bombay manufacturer at a price much below that paid formerly for the foreign article. After investigation by the Department glass electric light fittings for railway carriages were purchased from a Calcutta manufacturer at about one-third of the price quoted for imported articles.

The total value of important items of engineering and miscellaneous stores wholly or partly manufactured in India for which contracts were placed during the year amounted approximately to Rs. 72,75,000. Details of these purchases will be found in paragraph 71.

27. *Distribution of purchases.*—The statistics given in Appendix VII show the distribution of contracts placed by the Department among the various Provinces during the year under review and the three preceding years. It will be observed that as in the past the system of purchase followed by the Department ensured that contracts were widely distributed throughout the country.

28. *Details of important purchases.*—The more important purchases made during the year are shown below :—

Textile and Leather stores.	Amount. Rs.
1. Blankets, woollen	10,98,500
2. Drill, khaki, coloured, white and grey	7,82,000
3. Pugree cloth, muslin, nainsook, calico, etc.	7,61,000
4. Flannel	6,05,000
5. Tents and tent components	5,47,000
6. Cotton waste	5,32,000
7. Serges	5,22,000
8. Canvas, flax, cotton, etc.	4,74,000
9. Jackets, cardigan and jerseys, woollen	4,31,000
10. Netting and nets, mosquito	4,14,000
11. Greatcoats, greatcoat cloth and overcoats of blanketting cloth	3,76,000
12. Socks, cotton and woollen	3,44,000
13. Putties, cotton and woollen	3,27,000
14. Rugs, horse, jhools and lohies	2,44,000
15. Durries, cotton	1,78,000
16. Yarn, cotton and woollen	1,50,000
17. Paulins, flax, jute and canvas	1,40,000
18. Bags, postal, jute, flax and leather	1,37,000
19. Ropes and cordages, manilla, hemp, jute and twine	1,30,000
20. Sheets, hospital and barrack	1,29,000
21. Wool, cotton, absorbent	1,23,000
22. Twill, cotton	1,18,000
23. Cloth, cord, cotton and cloth, cord, woollen	1,07,000

Textile.	Amount.
	Rs.
24. Flannelette	91,000
25. Longcloth and *dhotie* cloth	84,000
26. Thread, sewing machine and balls	73,500
27. Boots, shoes and belts, leather	71,000
28. Ropes, head and heel	70,000
29. Tape, webbing, newar, etc.	70,000
30. Leather cloth and cloth binding furniture	65,000
31. Cordage, cotton	62,000
32. Canvas, linen, brown	59,000
33. Hats, felt, Gurkha	54,000
34. Capes and coats, waterproof	53,000
35. Hessians and gunnies	51,000
Engineering and allied stores.	
36. Oil, lubricating	21,52,000
37. Motor vehicles and spares	20,05,000
38. Oil, kerosene	16,24,000
39. Cement	12,56,000
40. Electric transmission line materials	11,58,000
41. Road dressing materials	11,06,000
42. Oil fuel	8,72,000
43. Electric fans and fittings	7,61,000
44. Electric lamps	7,48,000
45. Steel sections and sheets	6,86,000
46. Oil, castor	5,97,000
47. Cables, electric	5,20,000
48. Pipes and specials, cast iron	5,06,000
49. Wire, copper	5,00,000
50. Paints and pigments	4,96,000
51. Pipes and fittings, wrought iron, or mild steel	4,59,000
52. Primary and secondary electric cells and components	4,48,000
53. Electric generating and converting plants	3,58,000
54. Enamels and varnishes	3,47,000
55. Steel structures	3,38,000
56. Asbestos cement sheets	3,26,000
57. Tyres and axles, steel, for locomotives and carriages	3,19,000
58. Pumping plant and equipment	3,07,000
59. Tyres and tubes, rubber	2,96,000
60. Wire, galvanized iron	2,67,000
61. Vacuum brake fittings	2,45,000
62. Petrol	2,33,000
63. Oil, gas making	2,24,000
64. Miscellaneous plant and machinery	2,21,000
65. Boiler tubes for locomotives	1,81,000
66. Pig iron	1,61,000
67. Coke and coal	1,41,000
68. Sheets, galvanised iron, corrugated	1,40,000

Textile.	Amount. Rs.
69. Lighthouse equipment	1,14,000
70. Insulators, porcelain	1,11,000
71. Steel work for Aeroplane hangars	1,10,000
72. Oxygen gas	1,08,000
73. Sheets, iron	1,02,000
74. Hydro-Electric Power pipe line and accessories	98,000
75. Wagon, ferry, flat	96,000
76. Meters, water	94,000
77. Disinfecting fluids	89,000
78. Acids and chemicals	79,000
79. Creosote	76,000
80. Telegraph instruments	71,000
81. Zinc tiles	69,000
82. Gates, sluice, for canal regulators	64,000
83. Meters, electric	64,000
84. Wagon landing stage	61,000
85. Tools, workshops, machine	57,000
86. Points, rodding..	56,000
87. Turpentine	54,000
88. Greases	52,000
89. Cooking ranges	50,000
90. Timber	50,000
91. Poles, steel, tubular	50,000

29. *Running and Rate Contracts.*—The system of Running and Rate contracts on an annual basis or for longer periods was extended during the year to several new classes of stores. Particulars of such contracts made during the year are shown in Appendix VIII. Applications for permission to purchase under these contracts have been received in increasing numbers from all parts of India and it is evident that an increasing number of indenting officers appreciate the advantages which the system offers to them. There has also been a gratifying increase of business from quasi-public bodies, such as municipalities, particularly in regard to the supply of consumable stores required for use in electrical generating stations and other public utility services.

30. *Work done by Provincial Purchase Circles.*—The Provincial Purchase Circles at Calcutta, Bombay, and Karachi continued to render good service and to fill the need which indenting officers, distant from places of supply, find of having an experienced Purchase agency at the larger Ports. Their work also was inevitably affected by the general depression and financial stringency and their returns for the year, as was to be expected, have suffered from these causes.

The total value of contracts entered into by the three Provincial offices during the year amounted to Rs. 47,41,408 as compared with Rs. 56,04,554 during the preceding year, or a decrease of 15½ per cent. The number of indenting authorities utilising the services of the Circles decreased from 722 to 687. The number of indents received declined from 11,169 to 9,954 and the number of orders decreased from 19,883 to 15,536. In addition to the transactions

represented by these statistics, the Circle offices were required to negotiate a certain number of larger purchases on behalf of the Headquarters office.

One hundred and nintysix firms applied for registration as Approved Contractors during the year. These were inspected by the Provincial organisations and of this number 168 firms were reported on favourably.

Details of contracts placed by the Provincial organisations and the fees earned by them are shown in Appendix IV.

31. *The Calcutta Purchase Circle.*—The general contraction in expenditure was reflected in the falling off in the value of business transacted in the Calcutta Circle in common with the others. The number of indenting authorities, decreased from 398 to 341. The number of indents received fell from 6,073 to 5,600 and the number of orders placed from 9,217 to 7,180. The total value of stores purchased fell from Rs. 25,75,700 to Rs. 23,25,897, *i.e.*, by 10 per cent. When allowance is made for the downward trend of all markets which persisted throughout the year, it may be claimed that this result is not unsatisfactory. Indenting authorities were encouraged to deal themselves with demands for petty items by local purchase and the number of items included in indents decreased from 18,855 to 15,056. There was a gratifying increase in the value of supplies purchased for Railway Administrations and the increase recorded amounts to approximately Rs. 200,000. There were, however, heavy reductions in the value of business received from the Army, the Andamans Commission, including Engineer and Harbour Master, Port Blair, and the Posts and Telegraphs Department. These reductions were respectively Rs. 1,68,000, Rs. 92,000 and Rs. 63,000. The closing down of one Forest Division in the Andaman Islands contributed to the reduction in the value of orders received from this source.

During the year the capacity of 120 firms who applied for registration was investigated. Of these 66 were recommended for registration on the Headquarters' list and 36 for registration on the Calcutta Circle list.

32. *The Bombay Purchase Circle.*—The number of indentors who placed requisitions on this Circle during the years increased from 217 to 220. The number of indents and items decreased and were 2,450 and 9,411 respectively as against 2,644 indents and 10,365 items during the preceding year. The number of contracts placed decreased from 5,138 to 4,763 and their value from Rs. 15,60,137 to Rs. 13,40,312 (*i.e.*, by 14 per cent.). Fortysix new indentors entrusted their purchases to this Circle for the first time since its inception and the value of stores purchased on behalf of these amounted to Rs. 57,693.

The decrease in the turnover was chiefly due to curtailment in the value of demands from the following :—

	Rs.
Royal Indian Marine	2,97,734
Military Engineer Services	1,68,600
Major Local Governments	2,00,281

But purchases on behalf of Railway Administrations increased from Rs. 45,199 in 1930-31 to Rs. 4,42,938. Purchases for the Civil Departments of the Central Government also increased from Rs. 1,61,082 to Rs. 1,92,391.

During the year the capacity of 64 firms was investigated of which 57 were recommended for registration.

33. *The Karachi Purchase Circle.*—The number of indenting officers utilising the services of the Karachi Circle during the year increased to 126 as compared with 107 during the preceding year. The number of indents received dropped from 2,452 to 1,904 and the number of items fell from 12,923 to 7,022. The number of contracts placed was 3,593 as compared with 5,528 during the 1930-31 and the total value of purchases amounted to Rs. 10,81,199 as against Rs. 14,68,717 during the previous year, *i.e.*, a drop of 26 per cent.

The value of the purchases made on behalf of the Military Engineer Services was Rs. 5,29,110 as against Rs. 7,51,222 during the 1930-31. The turnover from the Lloyd Barrage and Canals Construction was practically the same, being Rs. 3,64,701 as against Rs. 3,73,336 during the previous year. Purchases for the Punjab Public Works Department declined from 1,83,000 to Rs. 77,333. Similarly the work done on behalf of the Sind Public Works Department fell in value from Rs. 77,800 to Rs. 42,761.

During the year under report applications for registration were received from 12 firms of whom 9 were placed on the " Approved Contractors " list.

34. *Comparison with the London Stores Department.*—Appendix IX furnishes a comparison of the number of contracts for stores and freight placed by the India Store Department, London, and the expenditure incurred thereon, with the numbers and values of the contracts made by the Indian Stores Department during the years 1928-29 to 1930-31.

Appendix X provides a comparison between the values of contracts placed by the two organisations during the same period. The figures relating to the London Store Department have been converted into Indian currency at the rate of 1*s*. 6*d*. to the rupee.

Attention is drawn to the considerable decrease in the value of stores purchased by the London Stores Department during the year 1930-31. The figures of the London Stores Department for 1931-32 are not yet available.

CHAPTER IV.

Work of the Inspection Branch.

35. *General.*—Besides exercising general supervsion over the activities of the provincial Inspection Circles, the Government Test House, Alipore, and the Metallurgical Inspectorate, Tatanagar, the staff of the Inspection Branch at Headquarters is employed on the preparation and revision of specifications and schedules of requirements, and technical scrutiny of engineering schemes. It is also entrusted with the duty of exploring all possible means of developing Indian Industries and standardization of supplies.

36. *Arrangements for inspection of materials in the country of origin.*—The services of the Director General, India Store Department, London, were utilised to a less extent than in previous years owing to the reduction in orders for engineering structures and Rolling stocks and also to the decision reached during the year that certain classes of raw materials should normally be inspected on arrival in this country.

The arrangement for the pre-inspection of materials referred to in paragraphs 31 and 37 of the Reports for the years 1929-30 and 1930-31, respectively, which was sanctioned for a limited period in the first instance, was continued subject to the condition that the percentage charge for inspection of supplies on the Continent of Europe was increased from 2 per cent. to 2½ per cent. with a minimum charge of £5 instead of £2-10-0 for each individual order. Eleven calls for inspection were received during the year and forwarded to the Director General, India Store Department, London, for disposal.

37. *Specifications.*—During the year sixtyone specifications were framed and 142 specifications were revised, compared with 48 and 93, respectively, in the preceding year. In addition to these, 22 specifications were scrutinised for the Standing Committee on Standards and Specifications for Indian Railways and 5 specifications framed by the Army Department were examined. A list of the specifications which were current at the end of the year 1931-32 will be found in Appendix XI.

38. *Schedules of Requirements.*—One hundred and fifteen schedules of requirements were framed during the year as against 121 in the previous year and 4 were revised as against 7 in the preceding year. Some of the more important of the schedules of requirements prepared are detailed below :—

(1) Tube well air lift pumping plant, oil engine driven generating set, etc., for the Military Engineer Services, Cawnpore.

(2) Steelwork, etc., for condenser, switchgear and transformer repair houses at Lahore and Amritsar, respectively, for the Hydro-Electric Branch, Public Works Department, Punjab.

(3) Steelwork, etc., for transformer repair houses at Shanan, Kangra, Pathankote, Dhariwal and Kartarpur, for the Hydro-Electric Branch, Public Works Department, Punjab.

(4) Self-propelling dredgers for the Godavari river for the Public Works Department, Madras.

(5) Cast iron tower, lantern and second order optical apparatus for the Jaigarh Lighthouse, Bombay District.

(6) Single-acting vertical lift gates for the head regulator over Aral-Manchar feeder to Manchar Lake for the Lloyd Barrage and Canals Construction, Sind.

(7) Nickel steel alkaline batteries for Indian Railways.

(8) Door and window fittings for the Military Engineer Services.

(9) Radial gates for cross regulators of Fuleli Canal, Indus Left Bank Circle.

(10) Electrically driven vertical spindle pumping sets for the Military Engineer Services, Madras.

(11) A wagon landing stage for Staging ferry for Burma Railways.

(12) A wagon ferry flat for the Burma Railways.

(13) Two 60 k.w. oil engine driven D. C. generating sets and accessories for the Military Engineer Services, Allahabad.

(14) Pressed steel water tank 200,000 gallons capacity, housing, etc., for the Military Engineer Services, Kohat.

(15) Motor generator arc welding set for the Bhusawal Running Shed, Great Indian Peninsula Railway.

(16) Hydro-Electric Power pipe line for the City Board, Mussoorie.

(17) Screening and crushing plant for rock salt for Northern India Salt Revenue, Khewra.

(18) Steam tug for the Engineer-in-Chief, Vizagapatam Harbour.

(19) Electrically driven pumping sets, overhead crane, rapid filter plant liquid chlorinating plant, recording venturi meter and accessories for the Rajahmundry Water Supply Scheme, Madras.

39. *Technical investigations and advisory work.*—A number of schemes were subjected to technical scrutiny by the Department. Fiftyone enquiries as against 44 during the last year were received from various indenting officers asking for technical advice or other particulars. Special mention may be made of a Hydro-electric and pumping scheme, for the Public Works Department, Irrigation Branch, North-West Frontier Province, on which technical advice was given. The department concerned was furnished with information regarding the cost of plant, etc.

During the year under review an investigation which was commenced in 1929, was brought to conclusion, to determine, if possible, whether and what variation in strength of cotton goods was occasioned by variation in humidity and temperature. Although it was well-known that variations were produced by differences in humidity, it was required to ascertain whether an exact relation could be established between the two. The tests however showed that for fabrics tested during all months of the year under conditions obtaining in Calcutta the adoption of the saturation test as the standard was the only reliable way of standardizing comparable tests on cotton goods. As regards

woollen materials it was shown that the humidity and temperature were important, although not absolute, factors which had to be taken into account in making comparisons between the samples of any one material tested at different times.

40. *Erection at site orders.*—Twentyfive orders including "erection at site" were dealt with during the year, aggregating in value Rs. 18,11,192. Some of the more important of these are mentioned below :—

	Rs.
1. Transmission line materials for 15 towns in the Punjab ..	9,53,086
2. Steel work for the Hydro-Electric Branch, Public Works Department, Punjab	1,44,300
3. Air Lift Pumping plant for Military Engineer Services, Cawnpore	1,01,959
4. Generating plant for the Peshawar Power House of the Military Engineer Services	75,830

41. *Standardization.*—Considerable progress was made during the year in the direction of standardization of stores used by Government Departments. Some of the articles which were standardized are given below :—

(1) Scales (brass and mild steel), all Post Office type.

(2) Weights (brass, wrought iron and cast iron), 1/8th to 2,000 tolas.

(3) Padlocks and locks, drawer, safes, etc.

(4) Letter and pillar boxes and the time plates used in conjunction therewith.

(5) Badges used in Post Offices.

(6) Post Office notice or sign boards.

(7) Leather goods, particularly ammunition boots and moondah shoes.

(8) Window and door fittings for the Military Engineer Services.

It may be mentioned here that standardization is a means to eventual economy and efficiency and is of value both to the buyer and the manufacturer. Purchasing to definite standards results in improvement in quality, utilimate reduction in the cost of production and quicker supplies.

The Department maintained very close touch with the Railway Board's Central Standards Office and considerable assistance was obtained from that organisation, particularly in connection with the purchase and inspection of Railway materials. The very valuable work which is being done by the Central Standards Office is of utmost assistance to this Department, and the close liaison which is maintained between the two organisations ensures that in all specifications framed by Central Standards Office and this Department the principle of standardization is fully safeguarded.

42. *Sample Room.*—This section of the Inspection Branch at Headquarters is entrusted with the work of receipt, classification, storage and issue of samples received against invitations to tender and for development and standardization purposes. It dealt with 13,432 samples during the year as against 13,585 in the year 1930-31 and 11,641 in the year 1929-30. The decrease in the number of samples as compared with the previous year was mainly on the textile side,

being 9,126 as against 9,380. The engineering, hardware and miscellaneous samples increased from 4,205 to 4,306.

43. *Drawing Office.*—A section under the Inspection Branch at Headquarters, but of which mention has not previously been made in the Administration Reports, is the Drawing Office. The work of this section also deserves mention on account of the valuable assistance it rendered in the technical work of the Inspection Branch, particularly in respect of standardization. During the year 180 drawings, 263 tracings and approximately 72,000 square feet of blue prints were made as against 58,147 and 45,150, respectively, during the previous year. Special mention may be made of the 62 standard drawings prepared from 144 Post and Telegraph articles, formerly manufactured at the Postal Workshops at Aligarh. These drawings were of considerable value in standardizing the purchase of these articles and thus securing economy in supply.

44. *Technical publications issued.*—The following publications were issued during the year :—

(*i*) A pamphlet entitled "Failures of Engineering Materials" was prepared by the Metallurgical Inspector, Tatanagar, and published by the Department. This pamphlet, dealing with failures of engineering and structural materials, follows a previous issue in which the results of investigations of railway materials which had failed in service were described. Failures to which reference is made have occurred in various parts of India and have been referred to the Metallurgical Inspectorate for investigation. Typical examples of each type of failure have been selected in the hope that such information will be of service to engineers and metallurgists.

(*ii*) In paragraph 44 of the last year's report mention was made of the issue of the book entitled "Heavy Oil Engines, Classification, Origin and Development". The demands for copies of the publication have exhausted the first edition and it has therefore been necessary to arrange for a second edition of the publication. This is now in print.

(*iii*) A pamphlet entitled "Indian Stores Department and Assistance to Indian Industries" has been issued, attempting to present a review of the educative, development, and other work carried out by the Department to encourage and develop the industrial resources of the country.

(*iv*) A handbook for departmental use on "General Instructions for Inspecting Officers of the Indian Stores Department" has been completed and is now under print.

In addition to the above, the publication on "Specifications for oils and lubricants" was revised, as the result of certain modifications which have been made in the specifications relating to lubricating oil with a view to extending further the field of use of indigenous oils.

Provincial Inspection Circles.

45. *Work done by the Provincial Inspection Circles.*—Full details of the work done and fees earned by the various Inspection Circles are given in the following paragraphs and in Appendices XII, XIII and XIV. The year under review shows a decrease, as compared with the previous year, but a substantial increase as compared with the years 1929-30 and 1928-29, in the number of orders received for inspection. The number was 33,266 in 1931-32 as against 35,582, 29,951 and 30,302 in the three previous years. There was a marked increase in the total tonnage of stores inspected which are charged on weight, *i.e.*, 114,093 tons as compared with 40,814 tons, 48,828 tons and 42,515 tons during the three preceding years. On the other hand the total amount of orders inspected and charged on value decreased from Rs. 6,50,80,270 to Rs. 4,81,20,378. The fees earned by the Inspection Circles (excluding the Government Test House, Alipore, and the Metallurgical Inspectorate, Tatanagar), during the year under review and the three preceding years were Rs. 6,31,995, Rs. 7,17,154, Rs. 8,20,251 and Rs. 5,61,801, respectively.

It will be observed that in spite of the financial stringency which reacted on the activities of the Department as a whole, the work of the Inspection Circles was not as seriously affected as might have been expected.

The value of stores inspected on behalf of Railway Administrations declined from Rs. 2,85,36,524 to Rs. 2,08,98,201, whereas the material charged on weight increased from 34,381 to 110,584 tons. There was a substantial increase in the volume of work inspected on behalf of Provincial Governments, from Rs. 2,47,054 to Rs. 4,45,236.

46. *The Calcutta Inspection Circle.*—The effects of the widespread economic depression were felt in the Circle, but only to a limited extent. The total fees earned during the year were Rs. 4,50,544 compared with Rs. 4,39,189 in the preceding year.

The total number of orders received for inspection was 15,154 as against 15,970 received in the previous year. This figure is, however, considerably higher than in the years prior to 1930-31. The corresponding value of orders received was Rs. 2,58,73,878 as against Rs. 4,57,97,992 in the preceding year, or a decline of 43%. This is largely due to the decrease in the purchase of Rolling stock and bridge and structural work by the various railways, although the low price levels ruling during the year also contributed to it partly. For instance, the number of wagons under inspection fell from 4,528 to 934, and their value from Rs. 1,69,18,985 to Rs. 38,01,708.

The figures for orders inspected on a tonnage basis show a large increase over previous years, the total amounting to 111,595 tons as against 40,340 tons in the preceding year and 44,148 tons in the year 1929-30. This is attributable to larger quantities of steel and cast iron sleepers having been inspected during the year. The total number of sleepers inspected during the year amounted to 822,700.

decreased from Rs. 27,59,133 to Rs. 8,81,924 but there was an appreciable increase in the tonnage of material charged on weight, which rose from 200 to 2,496 tons. The reduction in the value of this class of orders was due to decrease in the number of orders of high value placed by State and Company worked railways for inspection by this Inspectorate.

The following are the more important orders inspected during the year :—

	Rs.
1. Thirteen 156′ 6″ Bridge girder spans for the Great Indian Peninsula Railway	4,74,269
2. Four 156′ 6″ Bridge girder spans for the Great Indian Peninsula Railway	1,57,819
3. Transformer repair houses at Amritsar and Lahore for the Hydro-Electric Branch, Public Works Department, Punjab	1,42,926
4. Extension of the erecting unit at Dohad, Bombay, Baroda and Central India Railway	86,967
5. Heavy repair shop at Deolali for Military Engineer Services ..	60,773

An order for nine 106 ft. six 80 ft. girder spans and one service girder for the Great Indian Peninsula Railway, Betwa Bridge, was completed during the year and was wholly fabricated in India under the inspection of this Circle. Another work inspected during the year and deserving special mention was a 350 ft. service girder for the Irrawady Bridge (Burma Railways) which with supports weighed approximately 1,105 tons.

The inspection of cast iron chairs, cast iron pipes and certain components of vacuum brake equipment, all of which were manufactured in India, formed an important part of the work of this Circle. Seventy thousand and five hundred cast iron chairs manufactured in Bombay were inspected against N. W. Railway requirements. One hundred and eightytwo tons of cast iron pipes manufactured at the Mysore Iron Works, Bhadravati, were inspected on behalf of the Karachi Municipality.

During the year the Circle dealt with four " erection at site " orders for plant and machinery, valued at Rs. 85,381. The works of 10 manufacturers were inspected and the firms were recommended for registration.

48. *The Government Test House, Bombay.*—The Test House continued to be attached to the Bombay Inspection Circle as heretofore, but as major portion of its activities was confined to departmental work and very little income was being earned from outside agencies, it was decided to close it with effect from the 20th October 1931. However, during the short period of 6½ months, 164 tests were carried out of which 102 related to physical section, 59 to the chemical section and 3 to the oil section.

Investigations were carried out during the year on fastness to light of dyes commonly used for cotton fabrics with a view to lay down if possible the minimum standard of fastness which can be accepted by the inspecting staff. Shade cards showing the tolerances of fading in respect of red and blue dyes were furnished to the Government Test House, Calcutta, for continuance of the work.



Kalabagh Bridge across the River Indus, North Western Railway.

A general view taken on 25-6-31.

(*Vide* paragraph 46.)

49. *The Karachi Inspection Circle.*—The work of this Circle was also adversely affected during the year by the general trade depression. The total number of orders received for inspection was 5,538 as compared with 7,486 in the previous year. The total value of stores inspected amounted to Rs. 42,63,092 as against Rs. 79,39,758 during the preceding year. The number of demands received for inspection from the Department declined from 7,456 to 5,528 whereas those placed by other departments dropped from 30 to 10 and the tonnage of material inspected on weight on behalf of those authorities decreased from 274 tons to 2 tons. The reduction in the calls for inspection against orders placed by other authorities was, as stated in the previous report, almost entirely due to the withdrawal of inspection work by the North Western Railway Administration, except for materials manufactured locally.

Three orders for plant and machinery and structural work were inspected at site after erection. These were the Aeroplane Hangar for Drigh Road, Karachi, valued at Rs. 60,543 ; oil engine driven generating plant for Bukkur Island, Sukkur, costing Rs. 18,596 and electric loco. cranes for Lloyd Barrage, Sukkur, amounting to Rs. 34,760.

Oils, lubricants and paints valued at Rs. 20,65,140 were inspected against Indian Stores Department contracts. Twelve non-departmental orders worth Rs. 1,46,575 were inspected, the most important being the Heavy Repair Shop at Quetta, which was inspected during fabrication on behalf of the Commander, Royal Engineers, Baluchistan District, Quetta.

The services of the Circle were also requisitioned by the Upper India Circle for inspection during fabrication of materials for an Aeroplane Hangar at Peshawar, costing Rs. 49,355.

50. *The Upper India Circle.*—The year under review shows an increase in the number of orders received and work done, although the aggregate value of stores inspected is less than that of the preceding year. The number of orders received and the value of orders inspected were 1,627 and Rs. 37,85,681 against 1,198 and Rs. 51,09,146 respectively in 1930-31. The increase in the number of orders is due to the growing popularity and usefulness of rate and running contracts, within the scope of which a large number of small demands are dealt with. The reduction in the total value of orders inspected during the year was due to the falling off in the number of orders for plant and machinery.

This Inspectorate is employed principally on the inspection and tests of "erection at site" orders for heavy plant and machinery and on the inspection of textile stores. During the year 42 "erection at site" orders for plant and machinery were received by the circle as against 65 dealt with during the preceding year. The following are the more important inspections made during the year :—

	Rs.
1. Four 40 and 75 K. W. oil engine driven D. C. generating sets for five power stations of the Military Engineer Services and Central Jail, Haripur	4,67,332
2. Five hundred K. W. 3,300 volts oil engine driven A. C. generating sets, complete with transformer and switchgear for the Jaipur Durbar	2,59,865

	Rs.
3. Two motor driven vertical shaft, medium lift pumping sets and two horizontal shaft high lift pumping sets, complete with pipework, specials, valves, transformers, high and low tension switchgear, etc., for the Ramgarh reservoir pumping station, Jaipur water supply	1,65,545
4. 165 H. P. oil engine driven pumping plant for Malezai pumping station, Baluchistan	98,894
5. 300 amperes hour capacity, Alconum cells for the N. W. Railway in sets of 38 cells—20 sets	69,588
6. Pressed steel tanks and stagings capacity from 50,000 to 100,000 gallons for the M. E. S., Mir Ali and Campbellpore	44,986
7. 500 K. W. Rotary Convertor Equipment complete with transformer, starting panel, H. & L. T. switchgear for P. W. D., New Delhi	32,512
8. Generating plant for the electrification of Kitchener College, Nowgong	31,429

The year under review shows an increase of 4 lakhs in the value of textile stores inspected, as compared with the previous year. The more important items of supplies of textile stores were blankets, jerseys, putties, socks, kullahs and drill for the North Western Railway, the Military and the Police authorities.

The premises of 60 manufacturing concerns were inspected and fifteen firms were recommended for registration.

51. *The Cawnpore Inspection Branch.*—This Branch deals with the inspection work to be carried out, on behalf of the Department in the United Provinces, particularly at Cawnpore and Aligarh. The most important class of work undertaken by this organisation is the inspection of textile and leather goods manufactured in Cawnpore which amounted to Rs. 14,44,290 during 1931-32. The engineering and hardware stores inspected and passed during the year were valued at Rs. 6,32,092. The total value of stores inspected amounted to Rs. 20,76,382 as against Rs. 24,57,120 in 1930-31. The total number of demands received for inspection were 1,153 as compared with 1,374 in the preceding year. The chief items of work dealt with were :—

(1) Cotton waste.

(2) Cotton drill.

(3) Uniforms for the staff of the E. I. Railway.

(4) Cotton yarn.

(5) Woollen materials.

(6) Leather goods.

(7) Locks.

(8) Oils and lubricants.

(9) Asbestos cement pipes.

(10) Timber.



Kalabagh Bridge across the River Indus.

Steel trestle with temporary attachment raising span to final level.

(*Vide* paragraph 46.)

The services of the Inspectorate were also requisitioned for the inspection of stores ordered direct by other departments. Stores to the value of Rs. 75,500 were inspected on behalf of the North Western Railway.

The works of 36 manufacturing concerns were inspected and reported on, and 13 firms were recommended for registration as approved contractors.

52. *The Madras Inspection Branch.*—This Inspectorate is employed largely on the Inspection of textile goods, though its activities in respect of inspection of engineering and hardware stores are expanding. During the year under review the volume of work which passed through the Inspectorate was greater, although the total fees earned were less than those in 1930-31. The total number of orders received for inspection increased from 597 to 1,375, but the value of stores inspected declined from Rs. 8,41,026 to Rs. 7,61,770.

The value of textile stores inspected decreased from Rs. 6,32,706 to Rs. 4,24,672 but on the other hand engineering, hardware and miscellaneous stores increased from Rs. 2,08,320 to Rs. 3,37,098. This increase is mainly due to the fact that this organisation was entrusted for the first time with the inspection of electrical goods. There was an appreciable reduction in the yardage of drill, khaki and other piece-goods inspected, being 9,08,559 yards as against 11,39,657 during the previous year. This decrease in yardage together with the general fall in prices of textile goods accounts for the decrease in the value of textile orders inspected.

CHAPTER V.

THE METALLURGICAL INSPECTORATE, TATANAGAR.

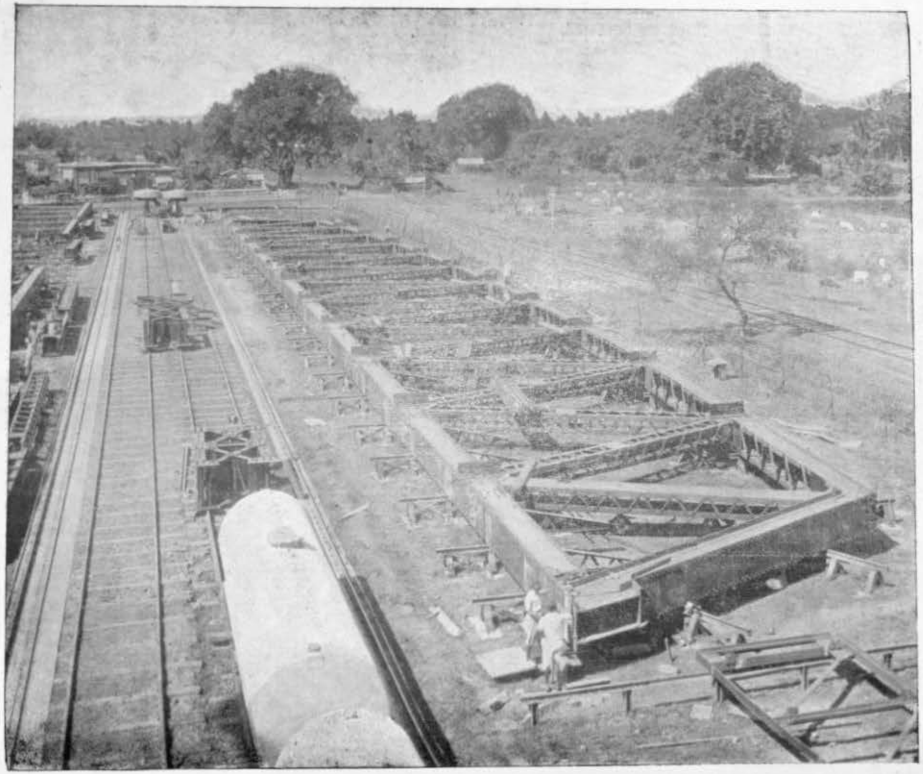
53. *Work done.*—The activities of the Metallurgical Inspectorate were adversely affected as a result of diminution in the purchases made by the Railways in India and general trade depression. The total value of materials of various descriptions handled during the year, namely, rails, fishplates, structural steel, sleepers, ammonium sulphate, cables, etc., amounted to Rs. 327 lakhs as compared with Rs. 465 lakhs in 1930-31. The table given below shows the tonnage and approximate value of the most important stores handled during the year.

Tonnage and approximate value of the most important stores inspected by the Metallurgical Inspectorate, Tatanagar, during the year 1931-32.

Description of stores.	Quantity.	Approximate value.
	Tons.	Rs.
Rails 1st class	45,515	50,06,650
Rails 1st class (chrome)	2,405	3,84,800
Rails and fishplates 2nd class	59	5,605
Fishplates	2,024	2,83,360
Structurals including sleeper bars	1,80,634	2,52,88,760
Sleepers	239	31,500
Ammonium sulphate	8,650 bags	10,04,000
Cables	17,61,637 yds.	3,96,750

All the above items were manufactured in Tatanagar and were produced, with the exception of cables, by Messrs. The Tata Iron & Steel Co., the inspection of whose products still forms the major part of the work of the Inspectorate. The cables were manufactured by Messrs. The Indian Cable Co.

Full details of the work done on behalf of the various authorities during the year as compared with the three preceding years are given in appendices XII to XV. The Railway Board's demands for the year under review totalled 79,550 tons of rails with 3,037 tons of fishplates, as against 120,174 tons and 4,655 tons of rails and fishplates respectively, demanded during the previous year. On the other hand, the quantity of structural material inspected during the year showed no great diminution in tonnage as compared with that of the previous year, the figures being 1·81 lakhs (tons) during 1931-32 as against 2·16 lakhs (tons) in 1930-31. No sleepers were manufactured by the Tata Iron & Steel Co., Ld., in 1931-32, all deliveries being made from stocks.



Kotri Bridge—North Western Railway.

360 feet Span Girder.

(*Vide* paragraph 46.)

The works of the Indian Cable Company were fully employed during the latter half of the year. Eighteen thousand nine hundred and fortythree coils representing 17,61,637 yards of cable were tested and certified as against 20,622 coils, or 20,64,032 yards during the year 1930-31.

The Indian Steel Wire Products Company, which remained closed for several years, resumed its operations during the year and a few small orders were inspected and tested on behalf of the Indian Stores Department.

54. *Tests and estimations.*—Owing to the decrease in the Railway Board's requirements and general trade depression the number of analyses and tests carried out has greatly diminished.

The work connected with the sampling and analysis of ammonium sulphate showed an increase as compared with the previous year, owing to the fact that the total shipments of this chemical were 6,422 tons against last year's figure of 5,900 tons. The number of bags tested totalled 8,650 against 7,750 bags in 1930-31. The number of special tests carried out decreased from 7,067 in the previous year to 6,345 in 1931-32. Following the diminution in the tonnage of material inspected, the number of estimations of carbon, silicon, manganese, sulphur and phosphorus declined from 25,000 to 10,346 and of physical tests from 45,507 to 27,799.

The testing of oxygen was undertaken at the Inspectorate during the year for the first time, the number of samples tested being 200 cylinders representing 20,000 c. ft. of oxygen. A considerable tonnage of sleeper bar, *viz.*, 35,817 tons, was analysed and tested for a firm in Calcutta.

55. *Investigations.*—The number of investigations undertaken during the year was 45 as against 88 in the previous year. These investigations involved 512 tests and analyses yielding a revenue of Rs. 3,084 as against 729 tests and analyses carried out and Rs. 4,920 earned in 1930-31.

The investigation on the effect of tropical conditions on rubber insulated cables, which was mentioned in the last year's report, is still being continued. It is proposed to continue these tests for some considerable period and the results of the investigation are expected to be of interest not only to the indigenous industry but also to cable users in India.

56. *Technical papers.*—The following articles contributed by the staff of the Metallurgical Inspectorate were published in the Railway Board Technical Bulletins :—

(1) " The effect of a creep-pin hole on the resistance of a rail to impact".

(2) " Rails with lap in web and impact tests ".

57. *Inspection and testing equipment.*—The Inspectorate is staffed and fully equipped to undertake the examination of all classes and grades of ferrous and non-ferrous metals and also investigations into the behaviour or failure of such materials in actual service.

CHAPTER VI.

The Government Test House, Calcutta.

58. *General.*—The general trade depression has not had such a serious effect, during the year, on the work of the Government Test House, as seemed probable. The work showed only a slight decrease as compared with the preceding year. The total number of samples tested was 7,892 as compared with 8,628 in 1930-31, whereas the total fees earned were Rs. 1,78,836 as against Rs. 1,80,605 during the preceding year. Of the total number of samples tested, 3,561 were for the Indian Stores Department, 548 for Provincial Governments, 957 for Railway Administrations and 1,825 for private concerns and Indian States, as compared with 3,344, 466, 1,401 and 2,343 respectively for the same parties during 1930-31. On the whole the total volume of work received from Government departments and Railways shows little change. A comparison of the work done during the year with the record of the three preceding years is shown in appendices XII and XV and a list of the materials tested during the year is given in appendix XVI.

59. *Physical Section.*—During the year, the Physical Section carried out tests on 4,484 samples, as compared with 4,736 samples tested in 1930-31. This decrease was due to the reduction from 1,529 to 624 in the number of samples tested in the textile sub-section. These figures are not strictly comparable as a considerable number of samples received during the previous year was sent for simple tests only which had to be carried out in connection with a special investigation made into the effects of variation of atmospheric humidity and temperature on the properties of cotton fabrics of various types and weights. This heavy drop in the work of the textile sub-section was, to a great extent, offset by increase recorded in the work of other sub-sections. The work in the electrical sub-section had been steadily increasing since this class of work was first undertaken. The electrical laboratory was enlarged in 1929-30 with the result that the number of samples tested rose from 96 in 1928 to 295 during 1929-1930. This sub-section was further expanded in the previous year resulting in the increase in the number of samples tested from 608 in 1930-31 to 736 during the year under review.

Compression tests on concrete blocks, etc., increased from 429 to 650, due principally to the testing of considerable numbers of concrete blocks, received from the Teesta Bridge Construction Works, the Calcutta Improvement Trust and the Executive Engineer, Lucknow Provincial Division.

The greatest increase was in the tests of vacuum brake fittings, which rose from 54 to 464.

60. *Chemical Section.*—The number of samples tested was 3,408 against 3,892 in 1930-31. The items principally affected were coal with 216 samples against 311 and lubricating oil with 672 samples against 864. The number of tests of paints, varnishes and enamels remained almost unchanged. Considerable progress has been made in completing the examination of paints, etc., received under the standard sample scheme. The total number of samples received up to the end of the year was 1,797. Of these 1,679 have been reported, leaving a balance of 118, as compared with 461 in 1930-31.

In addition to the ordinary work, represented by samples reported, a considerable amount of work was done on standard samples of lubricating oils in connection with questions arising from specifications and otherwise.

61. *Exposure Tests on Paints and Varnishes.*—Further progress has been made in the practical testing of paint, varnish and enamels. The number of panels exposed during the year was 193, comprising 86 steel panels painted with paint or enamel, 20 wood panels painted with enamel, 53 wood panels treated with varnish and 34 wood panels treated with nitro-cellulose lacquers. The total number of panels exposed up to the end of the year was 852, of which 87 were on behalf of firms. Much useful information regarding the practical behaviour of paint and varnish was obtained from these tests.

Practical tests were also carried out on paints designed for railway carriage roofs and on leather revivers.

62. *Special Investigations.*—Among the special investigations carried out, the following may be mentioned :—

1. Comparative tests of the insulating properties of asbestos.
2. Investigation of the cause of the development of discoloration in hydrochloric acid.
3. Investigation of reported failures of white lead paints.
4. Investigation of the corrosion of carbon tetra-chloride fire extinguishers.
5. Development of a standard method for the determination of the zinc content of galvanised steel sheets.
6. Investigation of the changes occurring in lubricating oil after use.
7. Investigation of proposed methods of determining the resistance of turbine and crank chamber oils to oxidation.
8. Investigation of the influence of moisture content on the strength of different fabrics.
9. Determination of a method for eliminating effect of size content on the tensile strength of cotton fabrics.
10. Investigation of the regain to be allowed on union cloth.
11. Devising of a load extension test to be applied to newar tapes.
12. Investigation of the effect of storage on the di-electric resistance of electric cables.
13. Revision of existing and drafting of new I. S. D. specifications for :—
    (a) temporary rust-preventive,
    (b) fireclay and firebricks.
    (c) special green paints to E. B. Railway shade,
    (d) driving journal and rod cup grease.
    (e) aluminium paint.

(*f*) gold leaf,

(*g*) creosote oil,

(*h*) nitric acid.

The work in connection with items 3 and 12 is still in progress.

63. *Plant and apparatus installed during the year.*—The following items of plant and apparatus were added during the year to the laboratories of the Government Test House :—

Physical Laboratory.

Cement Section.—

1. Damp cupboard for determining the setting time of cement in accordance with the new British Standard Specification.

Textiles Section.—

1. Goodbrand yarn examining machine.
2. Spray testing apparatus.
3. Knowles patent yarn balance.

Electrical Section.—

1. Wheatstone bridge, post-office type.

Chemical Laboratory.

1. Two chemical balances.
2. Tar viscometer.
3. Microscope with accessories.
4. Hutchinson tar tester.
5. Hutchinson tar tester, junior model.
6. Hot air oven.
7. Hot water oven.
8. Electric muffle furnace.
9. Dissecting microscope.

Oil Section.—

1. Apparatus for volatility test of transformer and switch oils.
2. Arc and spark stand for spectroscopy.
3. Lovibond tintometer and full set of standard glasses.
4. Microscope arc lamp.
5. Motor blower.
6. Refrigerator for cold test of lubricating oils.

CHAPTER VII.

REGISTRATION OF FIRMS.

64. *Registration of firms at Headquarters Office.*—At the close of the year 1930-31 the total number of firms registered on the books of the Department as approved contractors was 2,670 (*vide* paragraph 67 of the Administration Report for that year). This number increased to 3,123 at the close of the year 1931-32. The table below gives further details of this registration :—

Description of Stores.	Bengal.	Bombay Presidency. Bombay.	Bombay Presidency. Karachi.	Madras.	Punjab.	United Provinces.	Delhi.	Burma.	Bihar and Orissa.	Central Provinces.	Assam.	N.-W. F. Province.	Other than British possessions in India	Firms outside India.	Total.
Stores falling under Rule 4 of the Rules for the supply of articles required to be purchased for the public service, *viz.* :—															
(*a*) Important plant and machinery ..	..	..	..	..	..	..	..	..	..	..	..	..	..	1,033	1,033
(*b*) Important Iron and Steel work ..	28	14	4	7	4	4	..	5	5	1	..	..	..	44	116
Other Stores.															
Railway materials	80	53	5	12	14	4	9	8	5	..	1	..	..	58	249
Mechanical equipment	189	146	23	37	35	18	25	32	4	..	1	..	8	172	690
Electrical equipment	120	84	17	25	23	13	18	15	3	..	1	1	9	117	446
Structural Engineering	21	5	2	1	4	1	4	3	..	..	..	..	..	..	41
Hardware	106	81	21	23	33	34	19	13	4	1	1	1	9	17	363
Implements and tools	68	49	10	16	17	14	12	11	..	..	2	1	3	29	232
Metals	94	65	16	17	22	10	16	15	5	1	..	1	3	6	271
Oils	56	39	4	15	11	11	5	8	..	..	2	..	6	3	160
Paints	60	50	13	17	7	3	6	8	2	1	2	..	3	4	176
Chemicals (excluding medicines and drugs)	50	29	9	7	8	6	7	9	..	..	..	..	3	3	131
Textiles.															
(*a*) Cotton materials	87	78	5	10	34	31	17	10	..	2	..	..	9	3	286
(*b*) Woollen materials	24	22	2	6	11	17	4	2	..	..	..	1	8	..	97
(*c*) Jute, flax and hemp materials ..	63	26	5	2	17	7	2	5	1	1	..	..	..	4	133
(*d*) Silk goods	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1
Leather goods	22	9	2	3	8	16	5	3	..	..	..	..	..	2	70
Miscellaneous stores	299	230	43	53	86	72	60	42	4	10	3	3	14	62	981
Scientific instruments and Laboratory equipment.	31	17	1	5	11	3	2	2	..	1	..	..	..	16	89
Total ..	1,398	997	182	256	345	265	211	191	33	18	13	8	75	1,573	5,565
Overlapping figures for firms registered for more than one item.	877	581	102	129	156	106	119	118	10	4	9	3	27	201	2,442
Net Total ..	521	416	80	127	189	159	92	73	23	14	4	5	48	1,372	3,123

65. It will be observed that out of the 3,123 firms on the books of the Department 1,751 are established in India. A large majority of the remaining 1,372 firms are those registered under Rule 4 as manufacturers of important Plant and Machinery. Most of these firms are represented in India and full particulars of such agencies are given in a list published by the Department from time to time. A revised edition of the list was issued during the year and in order to increase the usefulness of the publication two alphabetical indices were added. Copies of this list can be obtained on payment from the Government of India, Central Publication Branch, Calcutta, and from the Office of the High Commissioner for India, India House, Aldwych, London.

66. *Registration of firms at local Purchase Circles.*—In addition to the numbers mentioned in paragraph 64, sixty-two firms were added to the local lists of approved suppliers maintained by the Provincial organisations of the Department. Of these 33 are located in the Bengal Presidency, 22 in the Bombay Presidency (excluding Sind), 6 in the Karachi Purchase area and one in the Madras Presidency. The total number of firms registered on local lists in various territories on the 31st March 1932 was as follows :—

Territory.	Registered on the list of the C. P. Calcutta Circle.	Registered on the list of the C. P. Bombay Circle.	Registered on the list of the C. P. Karachi Circle.	Total.
Bengal	214	..	..	214
United Provinces	1	..	..	1
Bombay Presidency (excluding Sind).	..	133	..	133
Sind	..	..	77	77
Madras Presidency	12	..	..	12
Bangalore (C. and M. Station) ..	1	12	..	1
Bangalore City (Mysore State) ..	1	1	..	1
Total ..	229	147	77	439

CHAPTER VIII.

Encouragement of Indian Industries, Local Purchases and other Activities of the Department.

67. *Advice to manufacturers and encouragement to Indian industries.*—The assistance rendered by the Department since its establishment to indigenous industries is described in considerable detail in the pamphlet entitled 'The Indian Stores Department and Assistance to Indian Industries', issued in June 1931. The efforts of the Department in this direction were continued during the year under review with very satisfactory results. A few typical concrete cases are cited in the following paragraphs to show the range and nature of the assistance given.

68. *The Textile industry.*—The mills with whom important orders for textile goods were placed maintained a high standard of production. The most noticeable development in the cotton piece goods trade is the new venture in the production on a large scale, by several mills in India, of printed goods—both block and machine printing. A leading firm of textile manufacturers in Bombay have recently installed a mercerised plant and a roller printing machine and have introduced aerograph and block printing.

The following textile manufactures received special attention during the year :—

Kullahs.—The stitching of kullahs manufactured in the Ludhiana District had not been entirely satisfactory. The number of stitches per inch called for in the contract was eleven, whereas it was found that mostly seven or eight stitches were used and when eleven stitches were used the material was dragged. This was investigated and it was found that the needle being used in the machine was too thick to produce good stitches at 11 per inch. Thinner needles of better quality were recommended and this difficulty has now been overcome. It was further observed that long pointed needles were used in packing the ribs which frequently perforate the lining at the bottom of the rib, resulting in heavy rejections. A ball-pointed needle was adopted at the suggestion of this Department and it was found that this had not only eliminated the above defect, but increased the speed of the wadding operation.

Cloth, twill, khaki.—A Railway Administration formerly purchased annually a substantial quantity of an imported quality of twill, khaki. Against their requirements for the year under review tenders were called for from importers as well as Indian manufacturers. Out of the indigenous qualities offered one was considered to be a suitable substitute for the imported cloth. It was tested and offered to the Railway who approved it for their future demands.

Pugrees, helmet, khaki.—These used to be obtained through the Director General, India Store Department, London. With a view to divert demands, if possible, to this country, standard samples were supplied to Indian manufacturers. Two manufacturing concerns interested themselves in the matter and submitted counter samples, which were not considered

suitable. The defects found in the samples were communicated to them and one of them submitted an improved quality which was found acceptable. The firm have since secured an order for 22,700 pugrees, having underquoted the previous supplier of the imported quality. The efforts of the Department in this case thus resulted not only in the substitution of the indigenous for imported product but also effected economy.

Khaki pugree cloth.—Since 1924, endeavours were being made to obtain for the Army khaki pugree cloth of indigenous make in substitution of the imported quality. A firm in Bombay undertook to develop manufacture of this cloth to suit the Army requirements and supplied a few hundred pugrees for practical tests. Some of the units who tried those pugrees submitted favourable reports, while others pointed out certain defects. Against tenders invited by the Department, this firm quoted a competitive price. It was decided, in consultation with the Army authorities, to purchase 200,000 yards of the cloth from this firm to enable them to obtain actual manufacturing experience and so to improve the quality and shade of the material. The order was completed satisfactorily.

Polisher cloth.—At the suggestion of this Department, the Royal Indian Marine authorities have agreed to substitute polisher cloth of Indian manufacture for an imported brand previously used by them.

Waterproof hoods for turbans and yellow lace.—A certain indentor previously obtained his requirements of waterproof hoods and lace through the Director General, India Store Department, London, and with a view to diverting future demands to India, enquiries were instituted by this Department from likely manufacturers. Samples and quotations received were furnished to the indentor. He approved certain samples and forwarded indents for 300 hoods and 25,000 yards of yellow lace.

69. *The Engineering industry.*—Every possible encouragement and assistance was given, during the year, to the engineering industries by the Department. A few notable instances are given below :—

Castings.—A well-known firm owning a foundry which has been re-organised with the assistance of this Department wrote on the 7th May 1931, as follows :—

> "As you are aware, we have commenced the above to a scheme which we believe meets with your general approval. We consider it essential to carry out all our casting work, irrespective of its destination, to the standards laid down by your Department. Will you please, therefore, let us know whether you could arrange for the inspection of all our castings, say for a period of six months in the first instance, and if so, what basis for assessing fees would be practicable and convenient. We would like to take this opportunity of expressing our appreciation of the valuable advice we have received recently, and trust that you will be able to render us further assistance in the manner now suggested."

The above letter shows how an important manufacturing firm appreciates the value of the technical advice rendered by the Department and the reliance

it places on the Department as a means of ensuring that its products are up to the required standard. Arrangements were made to inspect the entire output of castings with effect from 1st July 1931.

Pipes Cast Iron.—Technical advice was given to a factory in Calcutta in regard to the installation of plant and appliances necessary for making and testing C. I. pipes to the British Standard Specification and for coating the pipes and specials. The firm, intending to take up on a moderate scale the casting of non-standard straight pipes (vertically) and specials to British Standard Specification, wanted to have particulars of dipping baths and arrangements, Angus Smith's solution, gauges and other items necessary for a general casting foundry. Such information as was required was furnished to them.

Cast Iron Sleepers.—There had been rather heavy rejections of plate sleepers offered for inspection by a firm in Calcutta. With a view to avoiding this and obtaining general improvement in the quality of the sleepers, technical advice and suggestions were offered by the Provincial Inspectorate on several points. The firm's attention was also directed to its method of charging cupola furnaces which was partly responsible for the failure of the sleepers under the drop test. As a result of the advice rendered, the firm closed down their foundry for over a week and carried out the alterations suggested. A remarkable improvement has been effected in the quality of the castings produced. All plates are now standing up the drop test and the transverse test bars seldom go below 30 cwts. breaking load, and deflection is always about $\frac{1}{2}''$.

Cooking ranges.—Against tenders for the annual contract for cooking ranges for the Army requirements a firm in Calcutta quoted for ranges manufactured by them in India similar in construction to an imported make. It was considered necessary to call for a report on the indigenous product in the first instance from the local Inspectorate. Certain defects were noticed, and recommendations for the rectification of these were made to the firm with the result that considerable improvement has been effected in the quality. These ranges have now been approved by the Army authorities for use in the Army and are being supplied.

Crossings.—As a result of the technical advice and assistance rendered by the Department to a firm in Bombay, before and during execution of an order for crossings for a Railway Administration, the supplies manufactured were considered to be fully up to the required standard. Another order placed with this firm by another Railway Administration afforded further opportunities to the technical officers of the Department to make suggestions for improvement in the quality.

Piston rods.—Considerable difficulty was being experienced by a manufacturer in Bombay in producing piston rods with stainless steel and cast bronze sleeves free from blow holes. A technical officer of the Department, after investigation of the cause of the trouble, made suggestions in respect of the method of manufacture, which were carried out by the firm, resulting in improvement in the quality of the product.

Kent couplers.—Considerable attention and assistance was rendered during the year, by the technical officers of the Department, to a manufac-

turer of electric, intervehicle, couplers in Bombay.

Among other articles to which attention was specially devoted during the year, for the purpose of developing their manufacture in India or their utilization in preference to the imported article, may be mentioned :—

Drills, twine balls, tents, woollen knitted goods, door and window fittings, stamp boxes, buttons, white lead, earthenware jars, electric insulators, hurricane lanterns, rubber tubing, iron beds, electric cables, fans, mild steel sheets, mild steel wire, vacuum brake fittings, cast iron foundry products, etc.

70. *Exhibition of Indian manufactures.*—In paragraphs 60 and 73 of the Reports for the years 1929-30 and 1930-31, respectively, mention was made of the arrangements made in the Imperial Secretariat Buildings, New Delhi, for exhibiting articles of indigenous manufacture. The utility of this exhibition to manufacturers appears to be fully appreciated and during the year exhibits comprising glassware, a cooking range, textile materials, electric cables, a model of a sugar cane mill, leather goods, paints, and varnishes were received from Indian manufacturing concerns. Several requests were received from importing firms for permission to exhibit articles of foreign manufacture but as the main object of the exhibition is to give using authorities the opportunity to see the range and quality of articles which can be obtained from Indian sources of supply, all offers of foreign articles were refused.

71. *Important purchases of articles of Indian manufacture.*—The Department continued its efforts to substitute, wherever possible, and without sacrifice of efficiency or economy, articles of indigenous manufacture for the imported products. The following is a list of the more important contracts placed during the year for products which were wholly or partially manufactured in India :—

	Amount. Rs.
TEXTILE MATERIALS.	
Blankets, woollen	10,98,500
Drill, khaki, coloured, white and grey	7,83,000
Tents and tent components	5,47,000
Cotton waste	5,32,000
Jackets, cardigan, and jerseys, woollen	4,31,000
Greatcoats, greatcoat cloth, and overcoat blanketting cloth	3,76,000
Socks, woollen and cotton	3,44,000
Pugree cloth, muslin, nainsook, calico, etc.	3,27,000
Serges	3,00,000
Jhools, rugs and lohies	2,44,000
Putties, cotton and woollen	2,27,000
Durries, cotton	1,78,000
Yarn, cotton, woollen and silk	1,50,000
Paulins, flax, jute and canvas	1,40,000

	Amount. Rs.
TEXTILE MATERIALS—*contd.*	
Bags, postal, jute, flax and leather	1,37,000
Ropes and cordages, manilla, hemp and jute twine	1,30,000
Sheets, hospital and barrack	1,29,000
Wool, cotton, absorbent	1,23,000
Twill, cotton	1,18,000
Flannelette	91,000
Long cloth and dhotie cloth	84,000
Boots, shoes and leather belts	71,000
Ropes, head and heel	70,000
Tape, webbing, newar, etc.	70,000
Thread, sewing	67,000
Cordage, cotton	62,000
Capes and coats, waterproof	53,000
Hessians and gunnies	51,000
Cloth, jaconet and domestic grey	47,000
Towels and towelling cloth	45,000
Sheeting, cotton and sheets, bed	41,000
Dosuti	38,000
Garments, uniform	38,000
Cloth, woollen and twill	37,000
Covers, waterproof, tanks, mule, groundsheets, etc.	37,000
Gauze, absorbent, surgical	35,000
Cap comforters, comforters, caps, balaclava, etc.	33,000
Gloves and mittens	31,000
Cloth, cotton and duck, cotton	30,000
Bandage cloth	27,000
Cases, pillow, mattresses, etc.	26,000
Kullas, lungies, kamarbands, etc.	25,000
Dusters, handkerchiefs, cloths, tea, table, etc.	23,000
Madapalam cloth, dungari cloth, Holland cloth, etc.	20,000
Banians, hosetops, etc.	17,000
Bags, nose, ration, sea-kit, etc.	16,000
Cloth, bunting, red and green	14,000
Wool, sheep, wool, worsted and coir	13,000
Cloth, collar	13,000
Nets, hay and packs	12,000
Felt	12,000
Braids, laces, buttons, hooks and eyes, etc.	11,000
Bags, gunny	11,000

ENGINEERING AND ALLIED STORES.

	Amount. Rs.
Cement	12,43,000
Road dressing materials	8,73,000
Oil, axle, all weather	6,90,000
Oil, castor	5,97,000
Pipes and specials, cast iron	5,06,000
Wire, copper, electric	4,20,000
Paints, including dry pigments	3,79,000
Linseed oils, raw and double boiled	3,01,000
Steel sections	3,00,000
Structural work	2,86,000
Cables, electric	1,83,000
Enamels and varnishes	1,68,000
Pig iron	1,61,000
Oil, gas making	1,36,000
Aeroplane hangars	1,10,000
Oxygen gas	1,08,000
Wagon, ferry, flat	96,000
Creosote	76,000
Acids	65,000
Wagon landing stage	61,000
Insulators	58,000
Turpentine	54,000
Soaps, bar and soft	44,000
Kent couplers	40,000
Target apparatus	40,000
Timber in squares	37,000
Coal tar for painting purposes	33,000
Locks	29,000
Flexible cords	28,000
Rolled steel beams	25,000
Bricks, fire	21,000
"India" fans, electric	20,000
Pipes, stoneware	20,000
Points, rodding	20,000
Sleepers, sal, deodar, chir and kailwood	15,000
Rails	12,000
Steel shelving racks	10,000

72. *Certification of material for exemption of customs duty.*—It was mentioned in paragraph 74 of the Report for the year 1930-31, that the Metallurgical Inspector, Tatanagar, was entrusted with the duty of issuing certificates for exemption of customs duty in regard to certain items of raw material

used by the Indian Cable Company, the Aluminium Manufacturing Company and the Indian Steel Wire Products, Ltd. The certification work continued during the year under review.

73. *Scrutiny of indents on the India Store Department, London.*—As explained in paragraph 5, the year under review was the first complete financial year during which the Rupee Tender Rules introduced by the Government of India with effect from the 1st January 1931, were in force. Similar rules were also in force in the Provinces of Madras, Bombay, Assam and in the Central Provinces for the whole year and in the Province of Bihar and Orissa for a portion of the year. As a result of the introduction of these rules, and partly also due to the general financial stringency, only 915 indents on the Director General, India Store Department, London, for stores estimated to cost Rs. 93,84,301, were received for examination during the year against 1,165 indents of the estimated value of Rs. 2,83,80,217, examined during the preceding year. Items aggregating Rs. 3,94,293 or 4·2 per cent. of the total value of the indents examined were challenged and the results communicated to the indenting authorities.

CHAPTER IX.

FINANCE.

74. *Statistics of revenue and expenditure.*—The financial statement showing the earnings and expenditure of the Department for the four years ending with the year 1931-32 will be found in Appendix XVII. The figures for the year under review are, however, subject to further adjustments through supplementary accounts. The figures shown on the credit side of the financial statement include the recoveries from non-Government departments which are adjusted as Revenue, as well as those from Government departments, treated as Reduction of Expenditure; also a *pro-forma* credit, calculated at schedule rates, for work done on behalf of the non-commercial Civil departments of the Central Government against which no actual charges are made. The figures on the debit side include the gross direct expenditure chargeable to Revenue account as well as indirect charges usually incorporated in the Profit and Loss accounts of commercial undertakings.

75. *Financial position.*—The preliminary account for the year 1930-31, as presented in paragraph 76 of the report for that year, showed that the revenue of the Department amounted to Rs. 16,58,180 and the total direct and indirect expenditure amounted to Rs. 25,82,939 showing a net deficit of Rs. 9,24,759. The final accounts, which were subsequently compiled and have been incorporated in the statement opposite, closed with a total expenditure of Rs. 25,94,555 and revenue of Rs. 16,60,600, showing a net deficit of Rs. 9,33,955. The expenditure of the year under review, which amounted to Rs. 24,48,004, according to the provisional account at present available, was less than the expenditure of the preceding year by Rs. 1,46,551, and the earnings which amounted to Rs. 13,75,212, fell short of those of the year 1930-31 by Rs. 2,85,388. The net result of the working of the year was consequently less favourable than that of the preceding year by Rs. 1,38,837. A detailed examination of the credit side of the financial statement, together with that of the record of work done by the Purchase Branch as exhibited in Appendix V will disclose, however, that the depreciation of the financial position, as represented by these figures, is more apparent than real. It will be observed that the value of orders placed during the year 1930-31 amounted to Rs. 3,76,82,696. The Departmental charges earned on this turnover amounted to Rs. 3,76,846. The amount actually realised during the year and accounted for in the financial statement for that year was Rs. 4,52,794. The balance sheet for the year 1930-31, therefore, received a credit amounting to Rs. 75,948, for work done by the Purchase Branch in previous years. The value of orders placed during the year 1931-32, on the other hand, amounted to Rs. 3,60,00,006, on which a fee of Rs. 3,60,010 was earned by the Department. The amount actually realised and accounted for in the provisional financial statement, however, is Rs. 3,47,185 only, showing a carry-over of Rs. 12,825. The cumulative effect of these accounts adjustments in the balance sheet of the year under review is an additional debit of Rs. 88,773. Omitting this amount, the deficit on the working of the year 1931-32 exceeded that of the year 1930-31 by a sum of Rs. 50,064 only.

It should also be remembered that the reduction in the expenditure of the Department, as exhibited by the financial statement, does not, by any means

represent the full effect of the retrenchments actually carried out, since it was not possible to give immediate effect to all the measures of economy decided upon. As has been explained in Chapter II, the retrenchment measures are estimated to result in a saving exceeding Rs. 3,00,000 per annum, in the average expenditure of the Department, apart from the savings resulting from the 10% emergency cut on the salaries of the staff, the reductions effected in the staff of the Audit Department, and consequential reductions in other indirect charges included in the financial statement.

The Budget estimate of expenditure for the year 1932-33, in which full account has been taken of the retrenchments carried out in the year under review, and which amounts to Rs. 16,94,000 only, is Rs. 1,48,000 below the direct expenditure shown in the financial statement for 1931-32, in spite of the normal growth of expenditure due to annual increments, which is estimated at Rs. 40,000 approximately. It is thus apparent that, if full account is taken of the reductions carried out in the expenditure of the Department, there has been a substantial improvement in its financial position, in spite of the general financial and trade depression.

76. *Allocation of the expenditure of the Department over commercial and non-commercial activities.*—As explained in paragraph 8 of the last Report, the activities of the Department include, besides purchase, inspection and testing of stores, which alone are represented on the credit side of the financial statement, a considerable amount of unremunerative work connected with the development of industries by way of advice to manufacturers, scrutiny of demands for purchases from abroad, examination and preparation of specifications for other Government departments and collection of general market intelligence relating to sources of supply. An attempt has been made this year for the first time to exhibit the expenditure on the commercial and non-commercial activities of the Department separately, and the accounts for the years 1930-31 and 1931-32 have been split up accordingly. The distribution of expenditure and revenue between the commercial and non-commercial activities has been based on principles settled in close and prolonged consultation with the Audit Officer, Indian Stores Department, and accepted by the Director of Commercial Audit.

SIMLA;
Dated the 12th July 1932.

J. S. PITKEATHLY,
Chief Controller of Stores,
Indian Stores Department.

APPENDIX I.

(*Vide* paragraph 9.)

Hints for the Guidance of Authorities in India desirous of Utilising the Services of the Indian Stores Department.

1. *Authorities for which the Indian Stores Department is permitted to act.*—The Indian Stores Department is authorised to arrange for the purchase and inspection of stores on behalf of all Government Departments, Central as well as Provincial, State and Company Railways, Indian States and *quasi*-public bodies in India. It must be understood, however, that the department acts merely as an agent in this connection and is not in any way responsible as principal either to the seller or to the buyer.

2. The services of the Department can be utilised for the inspection of stores, orders for which are placed by the consuming authorities direct, and for the testing and analyses of materials at the Government Test House and the Metallurgical Inspectorate, by Government departments, Company Railways, *quasi*-public bodies and Indian States, as well as by private parties.

3. *Classes of stores which can be purchased through the Indian Stores Department.*—The Indian Stores Department undertakes to arrange for the supply of all classes of stores *except* :—

(1) Foodstuffs and forage.

(2) Lethal stores.

(3) Stationery stores, printing stores and office machinery and appliances as detailed in the appendix to the Rules for the supply of Printing and Stationery stores for the Public service.

(4) Medical stores.

(5) Mathematical instruments, which under standing orders are to be obtained from the Mathematical Instrument Office.

(6) Scientific instruments and accessories of a special character which involve a departure from standard.

(7) Coal and coke in cases in which the total annual requirement is less than 150 tons in respect of each commodity, and firewood and charcoal.

(8) Straw.

(9) Road metal, bricks, stone, marble and similar building materials, lime, sand and chalk.

(10) Country-made wooden furniture.

(11) China, glass, cutlery, plate, crockery and perishable fabrics including linen for residences which are furnished by Government.

(12) Other classes of stores of a value not exceeding Rs. 100 in each case, except stores for which running and rate contracts have been arranged.

The department is, however, prepared to make purchases of articles costing less than Rs. 100 in value in special cases in which indenting officers find it difficult or inconvenient to make purchases direct.

4. *Organization of the Purchase Branch.*—Besides a purchase branch in the Headquarters office, divided into a number of sections dealing with different classes of stores, which is located at Simla from the middle of April to the middle of October and at the Imperial Secretariat Building, New Delhi, during the rest of the year, Provincial Purchase

Circles are located at Calcutta, Bombay and Karachi. The Postal and Telegraphic addresses of these Circles and their scope of operations are given below :—

Postal Address.	Telegraphic Address.	Territory within which allowed to operate (*a*).
Controller of Purchase, Calcutta Circle, Indian Stores Department, 6, Esplanade East, Calcutta.	Storchase, Calcutta.	Bengal, United Provinces, Assam, Bihar and Orissa, Madras Presidency (Northern parts) and Burma.
Controller of Purchase, Bombay Circle, Indian Stores Department, Hararwalla Building, Wittet Road, Ballard Estate, Bombay.	Storchase, Bombay.	Bombay Presidency (except Sind) the Central Provinces, the Madras Presidency (Southern parts) and Cawnpore (for textiles only).
Controller of Purchase, Karachi Agency, Indian Stores Department, Artillery Maidan, Karachi.	Storchase, Karachi.	Sind, Baluchistan, the Punjab and Cawnpore (for textiles only).

(*a*) This has reference to the market in which the order is placed and not to the headquarters of the indenting officer.

5. Provincial purchasing officers are authorised to receive direct indents for any item (or inter-connected items) of which the estimated cost does not exceed Rs. 2,500 (Rs. 5,000 in the case of items dealt with by the Controller of Purchase, Calcutta) and indents for a number of items the estimated total cost of which does not exceed Rs. 10,000. The Controller of Purchase, Calcutta Circle, is also authorised, as a special case, to deal direct with indents for the purchase of jute goods up to Rs. 50,000 and for requirements of the Telegraph Department up to Rs. 15,000; the Controller of Purchase, Bombay, Circle, for cotton yarn for the Jail Department, Bombay Presidency, up to Rs. 25,000 and for stores for the Royal Indian Marine up to Rs. 15,000; and the Controller of Purchase, Karachi Circle, for mild steel sections, for which orders have to be placed elsewhere than at Calcutta or Bombay, up to Rs. 15,000. Indents for stores the estimated cost of which is within these limits should be addressed direct to the appropriate provincial purchasing officer and those exceeding these limits should be forwarded to the Headquarters office.

6. *Instructions for the preparation of indents.*—Indents should be submitted on the standard Indian Stores Department indent form, supplies of which can be obtained on application from the office of the Chief Controller of Stores or from any of the Purchase Circles at Calcutta, Bombay and Karachi. The items indented for should be described in sufficient detail and any additional information should be given which will assist in the disposal of the indent, *e.g.*, references to catalogues or to previous supplies. The purpose for which stores are required should always be stated and reference to previous supply should be made when duplicates are required.

7. As different classes of stores are dealt with in different sections of the Purchase Branch of the Indian Stores Department, separate indents should, as far as practicable, be prepared for stores falling under various classes, namely :—

(1) Power plant and spares, sewage plant, radio and wireless stores, equipment for lighthouses, air-route lighting equipment, train lighting equipment, disinfectors, boilers, cranes and weighing machines.

(2) Pumping plant, boring plant, steam, gas and oil engines, motors, ice plant and refrigerators, punkha motor sets, excavators, oxy-acetylene plant, condensing and distilling plant, fire engines, fire extinguishers, road rollers and spares, chlorinating and water-softening plant.

(3) Engineering plant and machinery, motor vehicles, tractors, workshop equipment including spares, ball and roller bearings, Agricultural machinery, textile machinery, sea and river-craft and testing machines.

(4) Electrical stores (including transmission and distribution materials) and measuring instruments, telephone and telegraph equipment, and electric fittings for railway carriages.

(5) Structural steel work of all kinds, wire ropes, railway materials, target apparatus, boiler tubes, nightsoil, refuse and sanitary carts.

(6) Water supply stores, including hose pipes, metals, wire gauze, and wires of all kinds other than electrical.

(7) Steel sections, steel sheet piling, metal sheets of all kinds, steel door and window frames, door and window fittings, asbestos cement sheets, bearing metals, hair and leather belting.

(8) Miscellaneous engineering and hardware stores ; rubber goods including tyres and tubes, glassware, enamelware, oil lamps and lampware, crockery, cutlery, locks, safes, chests, cooking ranges, buttons, badges, clocks and watches, buckets, bicycles, steel furniture, firebricks and fire clay, handcuffs, enamel sign boards, scales and weights and Posts and Telegraphs requirements, etc.

(9) Oils and greases, petrol, tallow, candles, creosote, and road-dressing materials.

(10) Chemicals, gases, soaps, explosives, graphite foundry, disinfectants, and photographic materials.

(11) Cements, timber, coal, coke, tools, vacuum brake fittings and brushes.

(12) Paints and painters' materials (including linseed oils, turpentine and methylated spirits, gold leaf, paint remover).

(13) Textile, leather and allied stores.

Each separate indent should show items of a like description grouped together.

8. Indents for the purchase of plant and machinery should provide the fullest information possible and particular care should be taken to see that all peculiar local or special conditions, which might involve departures from normal standards, are mentioned.

9. Indents for spare parts should be compiled from makers' spare parts catalogues, where available, and care should be taken to quote the correct symbol, number and nomenclature or code word applicable to the particular type of plant. The makers' number of the machine should also be stated. Failing this, the date and source of original supply should be given. In dealing with demands of this kind drawings are frequently essential.

10. Sufficient time should be allowed to the department for arranging the purchase of stores. Additional expenditure is frequently involved in arranging purchases at short notice.

A specific date should be stated in the indents by which the stores are required, and expressions such as "immediately", "as early as possible" or "urgent" should be avoided. These expressions are constantly used, but they defeat their own object by making it impossible for the Indian Stores Department to differentiate between the degree of urgency of the various indents.

Indenting officers are also requested to spread the demands made on the Indian Stores Department evenly over the whole year as far as possible. The concentration of a large number of orders towards the close of the year not only tends to entail extra expenditure and inconvenience but makes for difficulties in the efficient disposal of the business connected with the purchase and inspection of stores.

11. Indentors should clearly state whether the goods are to be booked by goods or passenger train, whether at "Owner's" or at "Railway" Risk and whether they are to be insured on rail.

12. It is desirable that wherever possible the Stores Department should be made aware of the approximate amount which the indentor expects to pay for the stores indented

for. To this end against each item the last price paid should be entered in the "estimated cost" column in the indent form. The estimated cost of freight and the Indian Stores Department charges should be added to the total. If information as to the latest price paid is not available, a rough estimate should be given.

13. In the case of authorities with whom adjustments are made through the Exchange account the appropriate certificate of availability of funds on page 4 of the indent form should be completed on all indents, and in the case of others the treasury receipt or bank deposit receipt must accompany or follow the indents, *vide* paragraph 18.

14. *Disposal of indents.*—The Indian Stores Department holds no stocks of stores of any kind. On receipt of an indent supply is arranged, either by placing a separate order for the stores demanded or by combining the demand with others for compliance under a general contract, or, where convenient, under a "running" or "rate" contract. Copies of all orders are endorsed to indenting officers and consignees (if other than indenting officers).

15. In the event of the quotation which it is proposed to accept being considerably higher than the amount estimated by the indentor, a reference is made to him before the order is actually placed. In the absence of any special instructions on this point, the practice is to refer to the indentor if his estimate of the total cost of the stores demanded in any one indent is likely to be exceeded by 10 per cent. or Rs. 10,000, excepting when the total cost is not more than Rs. 1,000, in which case no reference to the indentor is made.

16. A list of the Rate and Running contracts entered into during the year 1930-31 is given in Appendix VIII. A list of the contracts in force, or copies of those in which an intending indentor may be interested, will be furnished on application. Arrangements can be made to enable Government officers, intending to avail themselves of the facilities, to requisition against such contracts direct from firms.

17. *Adjustment of accounts.*—Debits for the cost of stores purchased through the Indian Stores Department by Government officers and for the departmental charges for purchase (and inspection) levied by the Indian Stores Department are raised by the Audit Officer, Indian Stores Department, against the accounts officer of the consignee in the account of the month in which the suppliers' bills are paid, and exchange accounts showing all such transactions are sent by the Audit Officer, Indian Stores Department, to the accounts officer concerned, in the beginning of the second month after that to which the transactions pertain. Advance intimations of payments are sent to the consignees by the Audit Officer, Indian Stores Department, after a week of the date of payment, to keep the former informed of their liabilities and expenditure in respect of bills paid direct on certification by Inspectorates or in cases in which amounts passed by consignees are altered in audit.

18. In the case of authorities against whom book debits cannot be raised, *e.g.*, *quasi*-public bodies and Indian States, the indenting officers have the option either—

(*a*) of placing a sum equivalent to the estimated cost of the stores, *plus* the departmental charges payable for the services of the Indian Stores Department, to the credit of the Audit Officer, Indian Stores Department, in a Government treasury, forwarding the treasury receipt with the indent; or

(*b*) of depositing in a branch of the Imperial Bank of India in the name of the Audit Officer, Indian Stores Department, a sum of money sufficient to cover the estimated cost of the stores, *plus* departmental charges, with instructions to the bank that the sum should be strictly reserved for the purpose of meeting demands from the Audit Officer, Indian Stores Department, which should be complied with by the transfer of the amount to the Government account. The deposit receipt granted by the bank should be forwarded with the indent.

The latter alternative has been introduced to avoid large sums of money being locked up without interest.

19. *Inspection, Tests and Chemical Analyses.*—The inspection and testing staff of the Indian Stores Department is located at places noted below. The principal items of work dealt with in each organisation are also indicated :—

Postal Address.	Telegraphic Address.	Class of inspection work undertaken.
The Controller of Inspection, Calcutta Circle, Indian Stores Department, 6, Esplanade East, Calcutta.	Storspect, Calcutta.	Structural railway and General engineering stores, wagons, underframes, castings and textile stores. Inspectors are stationed at Jamshedpur, Asansol and Kulti to facilitate the inspection of wagons, castings, etc., manufactured at those places.
The Assistant Controller of Inspection, Bombay Circle, Indian Stores Department, Hararwalla Building, WittetRoad, Ballard Estate, Bombay.	Storspect, Bombay.	Steel work such as bridges and roof trusses, railway and general engineering and textile stores.
The Assistant Controller of Inspection, Karachi Agency, Indian Stores Department, Artillery Maidan, Karachi.	Storspect, Karachi.	Structural and general engineering stores.
The Inspector-in-Charge, Upper India Circle, Indian Stores Department, Attar Singh Building, The Mall, Lahore.	Storespect, Lahore.	Plant and machinery, structural railway general engineering and textile stores.
The Inspector-in-Charge, Cawnpore Inspection Branch, Indian Stores Department, 254, Nawabganj, Cawnpore.	Storspect, Cawnpore.	Textile and general engineering stores.
The Inspector-in-Charge, Madras Branch Indian Stores Department, Old High Court Buildings, Madras.	Storspect, Madras.	All kinds of textile stores.
The Metallurgical Inspector, Indian Stores Department, Burma Mines, Tatanagar.	Matalspect, Tatanagar.	Rails structural and general engineering stores, and all kinds of material manufactured by the Tata Iron and Steel Co., and allied companies, and the testing of metals and cables.
The Superintendent, Government Test House, 30, Judge's Court Road, Alipore, Calcutta.	Slim, Calcutta.	Chemical, physical, mechanical and electrical testing and analysis of materials of all kinds.

20. These organisations undertake the analyses, tests and investigations of chemicals and other stores, and inspection of material purchased by the Indian Stores Department, or by any other purchasing authorities. Where necessary, inspection in the country of origin is also arranged through the Director General, India Store Department, London. No additional charges are levied by the Department for the cost of such inspection.

21. Requests for inspection of purchases not made through the Indian Stores Department should be addressed to the nearest Inspectorate, or to the Chief Controller of Stores, Indian Stores Departm nt, Inspection Branch, on form I. S. D.-40, copies of which can be obtained from him or any Inspectorate, free of charge. Requests for tests or analyses should be addressed to the Superintendent, Government Test House, Alipore, Calcutta, or the Metallurgical Inspector, Tatanagar, as the case may be.

22. *Complaints.*—In the event of serious complaints in regard to quality or price of stores, or delay in supply, full details should be furnished to the Chief Controller of Stores, Indian Stores Department, when they will be carefully investigated. Minor complaints should, however, be referred to the supplying firms direct, and, if necessary, a copy of the complaint endorsed to the inspecting officer concerned in cases where the stores have been inspected by the Indian Stores Department. Complaints regarding adjustment of accounts should be addressed to the Audit Officer, Indian Stores Depart-

ment, New Delhi. If the matter is not satisfactorily settled, it should be referred to the Chief Controller of Stores.

23. All complaints should be made as promptly as possible, as delay may prejudice the chances of obtaining redress, particularly if arbitration or legal proceedings are involved.

24. *Rejections and disposal of rejected stores.*—In the case of orders placed by the Indian Stores Department, this Department is the contracting party, and the final rejection of stores lies within its competence alone. Therefore, it is not permissible for an indenting officer or consignee to reject stores which have been accepted by the Department. In cases in which an indenting officer considers that grounds for the rejection of such stores exist, a full report should be forwarded immediately to the Indian Stores Department Inspectorate concerned, and the goods complained of should be carefully stored to avoid loss or deterioration, pending investigation by the Department and the issue of final instructions as to their disposal. Should it be decided that the stores should be rejected, intimation to this effect will be furnished immediately to the contractor by the Indian Stores Department, and he will be informed that the stores lie at his risk from the date of such rejection, and that if not removed within a fortnight of rejection the purchaser will have the right to dispose of the stores as he thinks fit at the contractor's risk and on his account.

25. Cases occasionally occur in which stores are despatched to their destination after merely visual examination at the contractor's premises, works or godowns on the understanding that their final acceptance or rejection shall depend on the results of the tests carried out at the Government Test House. In such cases if the stores are rejected, the contractor will be informed at once, and the stores will lie at the consignee's depot at the contractor's risk from the date of such rejection, and if not removed within a fortnight of rejection, the consignee will have the right to dispose of them as he thinks fit at the contractor's risk and on his account.

26. Similarly, stores, which are rejected, by the inspecting officer appointed by the Indian Stores Department, after delivery, under the terms of the contract for inspection at the consignee's depot, will lie at the consignee's depot at the contractor's risk from the date of such rejection, and if not removed within a fortnight of rejection, the consignee will have the right to dispose of them as he thinks fit at the contractor's risk and on his account.

27. Stores rejected in the circumstances indicated above and not removed by the contractor within the period allowed for such removal should be disposed of by the consignee, either by return to the contractor or in such other manner as he considers most suited to the circumstances in each case.

28. *Departmental charges.*—Under the orders of the Government of India the Indian Stores Department levies a charge of 1 per cent. for purchase and 1 per cent. for inspection of the total cost of orders placed through its agency, on behalf of authorities in India, except in the case of orders placed on behalf of non-commercial Civil departments of the Central Government.

The charge of 1 per cent. for inspection includes all sampling and testing before the contract is concluded, and also, where necessary, sampling and testing during the currency of the contract. These charges are adjusted by the Audit Officer, Indian Stores Department, with the cost of stores.

29. The charges for analyses and tests of chemicals and other stores, and for inspection of purchases made by other purchasing authorities, carried out at the Government Test House, the Metallurgical Inspectorate or any other organisation under the Inspection Branch of the Department are given in detail in the schedules prescribed by the Government of India, Department of Industries and Labour, copies of which can be obtained from the Manager, Government of India, Central Publication Branch, 3, Government Place, West, Calcutta. Bills for these charges are prepared by the heads of inspection or testing organizations and forwarded to the parties concerned for acceptance and adjustment through exchange account in the case of Government departments (including State and Company Railways having exchange accounts) and payment in cash, either direct or into the nearest Government treasury, in the case of other authorities and private concerns.

30. No charge is made for services rendered by any branch of the Department (including the Government Test House and the Metallurgical Inspectorate) to non-commercial Civil departments of the Central Government.

APPENDIX II.

ORGANIZATION OF THE INDIAN STORES DEPARTMENT AS IT STOOD ON THE 31ST MARCH 1932.

(*Vide* paragraph 11 of the Report.)

CHIEF CONTROLLER OF STORES.

PURCHASE.

TEXTILES AND LEATHER.
- Deputy Director of Purchase.
- Assistant Director of Purchase.

ENGINEERING.
- Deputy Director of Purchase.

HARDWARE AND MISCELLANEOUS.
- Deputy Director of Purchase.
- Assistant Director of Purchase.

PROVINCIAL.

CALCUTTA.
- Controller of Purchase.
- Assistant Controller of Purchase.
- Head Clerk.
- Stenographer.
- 28 Clerks.
- 2 Duftries.
- 11 Peons.
- Chowkidar.

BOMBAY.
- Controller of Purchase.
- Assistant Controller of Purchase.
- Head Clerk.
- Stenographer.
- 17 Clerks.
- Duftry.
- 8 Peons.

KARACHI.
- Controller of Purchase.
- Assistant Controller of Purchase.
- Head Clerk.
- Stenographer.
- 19 Clerks.
- Duftry.
- 8 Peons.
- Chowkidar.

ADMINISTRATION AND INTELLIGENCE.

- Deputy Director of Administration and Intelligence.
- Assistant Director of Administration and Intelligence.
- 6 Superintendents.
- Examiner of Stores.
- 40 Assistants.
- 94 Clerks.
- 5 Stenographers.
- 14 Duftries.
- Jemadar.
- 39 Peons.
- 3 Farashes.

INSPECTION.

- Director of Inspection.
- Deputy Director of Inspection.
- Assistant Director of Inspection.
- Assistant Engineer (Inspection).
- Probationary Assistant Engineer (Inspection).
- Head Draftsman.
- 5 Draftsmen.
- Ferro-typer.

PROVINCIAL.

CALCUTTA INSPECTION CIRCLE.
- Controller of Inspection.
- 2 Assistant Controllers of Inspection.
- 12 Assistant Engineers (Inspection) and Inspectors of Stores.
- Personal Assistant to the Controller of Inspection.
- 15 Examiners.
- Head Clerk.
- Stenographer.
- 44 Clerks.
- 3 Checkers.
- Draftsman.
- 2 Duftries.
- 18 Peons.
- Chowkidar.

GOVERNMENT TEST HOUSE, ALIPORE.
- Superintendent, Government Test House.
  - Physicist.
  - Assistant Engineer.
  - 8 Physical Assistants.
  - Foreman.

  - Head Clerk.
  - Stenographer.
  - Accountant.
  - 13 Clerks.
  - Storekeeper.
  - 3 Laboratory Operators.
  - 4 Mistries.
  - 3 Fitters.
  - 13 Laboratory bearers.
  - 11 Laboratory Khalasies.
  - 2 Duftries.
  - 10 Peons.
  - Chowkidar.
  - Mali.

  - Chemist.
  - Assistant Chemist.
  - 15 Chemical Assistants.

METALLURGICAL INSPECTORATE.
- Metallurgical Inspector.
- Two Assistant Metallurgical Inspectors.
  - Physical.
    - 4 Inspectors.
    - 6 Examiners.
  - Head Clerk.
  - Accountant.
  - Stenographer
  - 9 Clerks.
  - 2 Turning and Fitting Mistries.
  - Head Laboratory bearer.
  - Laboratory bearer.
  - Duftry.
  - Head Peon.
  - 6 Peons.
  - Mali.
  - Chemical.
    - Chemist.
    - 5 Chemical Assistants.

MADRAS INSPECTION BRANCH.
- Inspector-in-Charge.
- 2 Clerks.
- 2 Peons.

BOMBAY INSPECTION CIRCLE.
- Assistant Controller of Inspection.
- 6 Assistant Engineers (Inspection) and Inspector of Stores.
- 7 Examiners.
- Head Clerk.
- Stenographer.
- 23 Clerks.
- Draftsman.
- Duftry.
- 10 Peons.
- Chowkidar.
- Farash.
- Laboratory bearer.

CAWNPORE BRANCH.
- Inspector-in-Charge.
- Examiner.
- 6 Clerks.
- Duftry.
- 4 Peons.
- Chowkidar.

UPPER INDIA CIRCLE.
- Inspector-in-Charge.
- Assistant Engineer (Inspection).
- Examiner.
- Head Clerk.
- Stenographer.
- 5 Clerks.
- Duftry.
- Farash.

KARACHI CIRCLE.
- Assistant Controller of Inspection.
- 2 Assistant Engineers (Inspection).
- 3 Examiners.
- Head Clerk.
- Stenographer.
- 18 Clerks.
- Duftry.
- 7 Peons.
- Chowkidar.

LEAVE RESERVE (Technical).

- 2 Assistant Controllers of Purchase.
- 4 Assistant Engineers (Inspection) and Inspectors of Stores.
- 3 Examiners of Stores.
- 2 Chemical Assistants.
- Physical Assistant.

Appointments held in abeyance under the orders of the Government of India but not formally abolished have been excluded.

APPENDIX III.

INDIAN STORES DEPARTMENT.

GAZETTED STAFF.

Up to 31st March 1932.

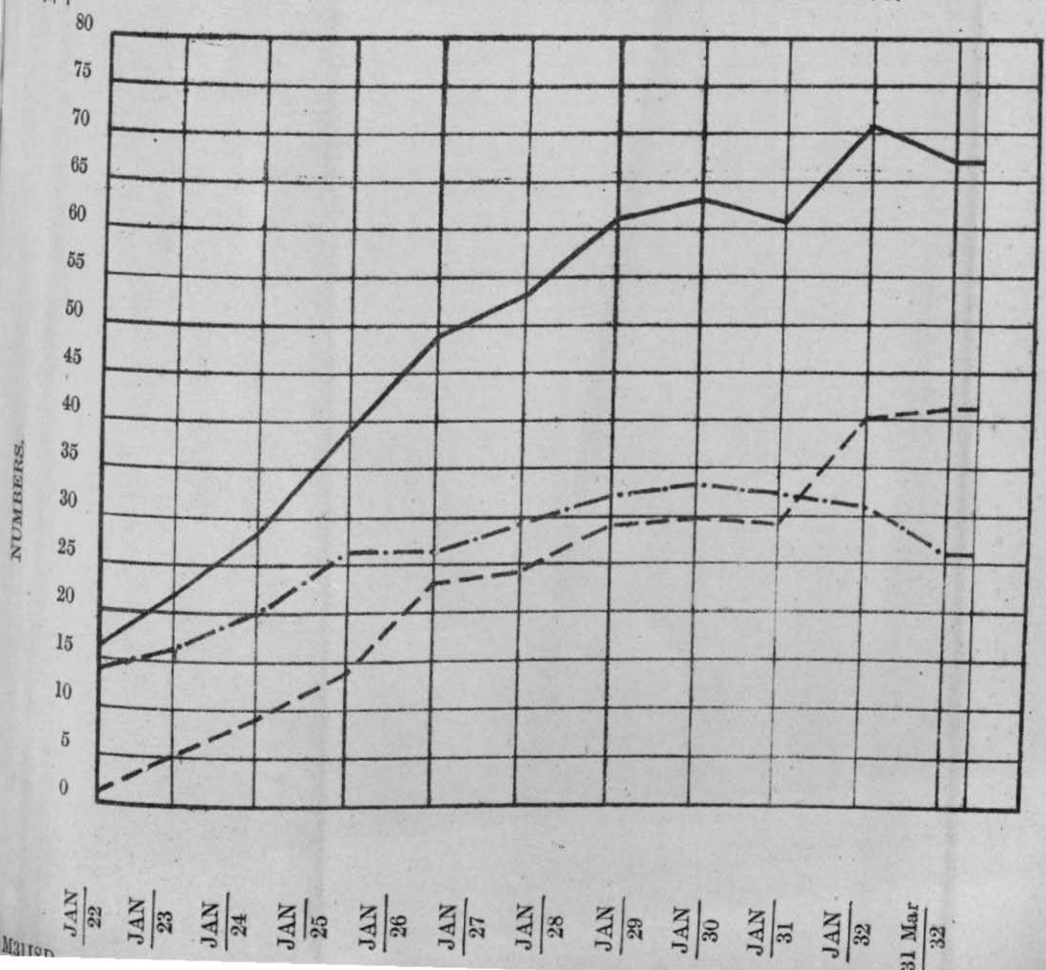
(*Vide paragraph 15 of the report.*)

TOTAL ————————

INDIANS — — — — — —

NON-INDIANS —·—·—

Non-Indians.	Indians.
14	2
16	5
20	8
26	13
26	23
29	24
32	29
33	30
32	29
31	40
26	41
26	41



APPENDIX IV.

Value of Stores purchased and fees earned.

(*Vide* paragraph 17 of the Report.)

Value of Stores purchased.

—	Textiles and leather stores.				Engineering and miscellaneous stores.				Total.				Fees earned.			
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.
Calcutta Purchase Circle.	4,45,860	4,87,072	4,43,673	4,07,095	13,38,265	17,45,584	21,32,027	19,08,802	17,84,125	22,32,656	25,75,700	23,15,897	17,841	22,327	25,757	23,159
Bombay Purchase Circle.	1,98,031	1,09,457	2,37,686	1,50,997	9,16,673	8,79,966	13,22,451	11,89,315	11,14,704	9,89,423	15,60,137	13,40,312	11,147	9,924	15,601	13,403
Karachi Purchase Circle.	67,811	81,166	43,227	28,103	14,55,097	19,38,726	14,25,490	10,57,096	15,22,908	20,19,892	14,68,717	10,85,199	15,229	20,199	14,707	10,862
Total Provincial Circle.	7,11,702	6,77,695	7,24,586	5,86,195	37,10,035	45,64,276	48,79,968	41,55,213	44,21,737	52,41,971	56,04,554	47,41,408	44,217	52,450	56,065	47,424
Headquarters Purchase Branch.	1,09,13,271	1,06,58,597	91,12,571	1,00,28,783	2,07,13,066	2,70,25,133	2,29,65,571	2,12,29,815	3,16,26,337	3,76,83,730	3,20,78,142	3,12,58,598	3,16,263	3,76,837	3,20,781	3,12,586
Grand Total ..	1,16,24,973	1,13,36,292	98,37,157	1,06,14,978	2,44,23,101	3,15,89,409	2,78,45,539	2,53,85,028	3,60,48,074	4,29,25,701	3,76,82,696	3,60,00,006	3,60,480	4,29,287	3,76,846	3,60,010

APPENDIX V.

Statement showing the value of stores purchased on behalf of various authorities utilizing the services of the Indian Stores Department during the year 1931-32 and three preceding years. (Vide *paragraph 17 of the Report.*)

Serial No.	Organization.	Purchases made during 1931-32.			Total for the year.		
		Textiles and Leather.	Engineering, hardware and miscellaneous stores.	Total for the year.	1930-31.	1929-30.	1928-29.
	Central—Army.						
1	Quartermaster General in India (including M. T.).	8,115	23,08,263	23,16,378	4,18,870	2,63,040	1,80,094
2	Master General of Ordnance	69,09,077	15,395	69,24,472	34,74,219	46,62,646	71,01,969
3	Military Engineer Services	22,729	41,23,085	41,45,814	56,99,268	64,09,311	53,31,542
4	Royal Indian Marine ..	26,980	2,74,948	3,01,928	8,34,024	4,54,327	5,77,541
5	Royal Air Force	656	1,16,036	1,16,692	1,00,881	1,02,494	81,733
6	Other Military Authorities—	289	17,915	18,204	948	412	1,168
	Total Central—Army	69,67,846	68,55,642	1,38,23,488	1,05,28,210	1,18,92,230	1,32,74,047
	Central—Civil. (including minor Administrations).						
7	Government of India Secretariat and attached offices	43,879	1,373	45,252	74,317	69,611	3,026
8	Superintendent, Viceregal Estates	400	13,090	13,490	12,449	3,623	1,964
	Authorities subordinate to the Department of Industries and Labour.						
9	Indian Posts and Telegraphs Department	2,53,515	18,49,476	21,02,991	40,57,441	38,68,485	10,03,767
10	Printing and Stationery Department (India) ..	1,02,485	21,627	1,24,112	33,083	34,607	41,704
11	Central Public Works Department	6,673	4,36,293	4,42,966	10,81,123	9,16,397	11,60,075
12	Civil Aviation Department	382	7,185	7,567	1,59,297	3,15,721	..
13	Other authorities ..	2,900	21,980	24,880	65,222	20,46[illegible]	45,357
	Total.—Authorities subordinate to the Department of Industries and Labour	3,65,955	23,36,561	27,02,516	53,96,166	51,55,678	22,50,903
14	Authorities subordinate to the Commerce Department	3,235	1,46,499	1,49,734	2,37,928	10,822	25,413
	Authorities subordinate to the Finance Department.						
15	Northern India Salt Revenue	3,899	93,013	96,912	96,071	1,17,787	3,16,406
16	Other authorities ..	22,388	50,015	72,403	1,37,040	1,63,885	1,22,857
	Total.—Authorities subordinate to the Finance Department	26,287	1,43,028	1,69,315	2,33,111	2,81,672	4,39,263

Serial No.	Organization.	Purchases made during 1931-32. Textiles and Leather.	Engineering hardware and miscellaneous stores.	Total for the year.	Total for the year. 1930-31.	1929-30.	1928-29.
	Authorities subordinate to the Department of Education, Health and Lands.						
17	Survey of India ..	37,258	3,910	41,168	97,076	1,04,610	59,951
18	Director-General, Indian Medical Service	2,10,408	5,054	2,15,462	2,91,809	43,953	3,73,323
19	Other authorities ..	6,628	26,406	33,034	1,47,408	87,323	55,366
	Total.—Authorities subordinate to the Department of Education, Health and Lands ..	2,54,294	35,370	2,89,664	5,36,293	2,35,886	4,88,640
20	Authorities subordinate to the Foreign and Political Department ..	42,757	1,26,545	1,69,302	98,658	40,490	49,482
	Minor Local Administrations.						
21	Baluchistan Administration ..	35,378	14,629	50,007	12,265	1,96,036	12,074
22	Coorg Administration	5,096	1,230	6,326	16,520	41,158	20,576
23	Ajmer-Merwara Administration ..	6,799	144	6,943	1,103	149	..
24	Delhi Administration	12,915	14,471	27,386	18,115	27,190	347
25	Andamans Commission	19,231	1,73,546	1,92,777	3,21,066	6,05,174	4,15, 28
26	North-West Frontier Province ..	50,524	21,179	71,703	2,68,680	1,51,802	1,34,911
	Total—Minor Local Administrations	1,29,943	2,25,199	3,55,142	6,37,749	10,21,509	5,83,736
	Total Central—Civil	8,66,750	30,27,665	38,94,415	72,26,671	68,19,291	38,42,316
	Railways—State-worked.						
27	North Western Railway	5,47,965	26,60,213	32,08,178	38,79,230	33,59,217	27,92,116
28	Eastern Bengal Railway	1,14,673	13,50,273	14,64,946	8,73,917	14,13,813	14,85,550
29	East Indian Railway	7,17,695	33,76,478	40,94,173	41,74,226	52,81,668	31,16,611
30	Great Indian Peninsula Railway ..	2,61,133	23,15,723	25,76,856	17,28,379	31,92,968	23,20,720
31	Burma Railways ..	24,977	4,34,089	4,59,066	10,38,489	5,51,036	86,769
32	Aden Railways ..	..	..	..	..	..	543
33	Central Publicity Bureau, State Railways	294	4,549	4,843	13,336	7,162	..
34	Railway Clearing Accounts Office ..	..	..	..	471	..	..
	Total.—State-worked Railways ..	16,66,737	1,01,41,325	1,18,08,062	1,17,08,048	1,38,05,864	98,02,309

Serial No.	Organization.	Purchases made during 1931-32. Textiles and Leather.	Engineering, hardware and miscellaneous stores.	Total for the year.	Total for the year. 1930-31.	1929-30.	1928-29.
	Railways—Company-worked.						
35	Assam-Bengal Railway ..	..	51,621	51,621	77,807	2,74,158	3,40,387
36	Bombay, Baroda and Central India Railway ..	27	234	261	..	9,037	..
37	South Indian Railway	24,387	3,28,658	3,53,045	3,85,050	3,78,714	1,14,213
38	Bengal Nagpur Railway ..	..	5,756	5,756	44,955	1,25,638	..
39	Madras and Southern Mahratta Railway	..	3,68,898	3,68,898	5,75,189	4,39,776	1,39,139
40	Calcutta Chord Railway	..	6,845	6,845	..	..	..
41	Indian Railway Conference Association	..	763	763	..	..	..
	Total.—Company-worked Railways	24,414	7,62,775	7,87,189	10,83,001	12,27,323	5,93,739
	Railways worked by Indian States.						
42	Mysore Railways ..	..	..	..	..	2,527	2,231
43	Jodhpur Railway ..	207	7,888	8,095	6,793	10,715	469
44	H. E. H. The Nizam's State Railway ..	663	10,043	10,706	..	..	5,857
	Total.—Railways worked by Indian States ..	870	17,931	18,801	6,793	13,242	8,557
	GRAND TOTAL—Railways	16,92,021	1,09,22,031	1,26,14,052	1,27,97,842	1,50,46,429	1,04,04,605
	PROVINCIAL. *Madras.*						
45	Public Works Department	288	2,94,934	2,95,222	4,60,553	4,28,100	1,89,341
46	Police Department	77,798	4,044	81,842	1,43,099	1,736	6,613
47	Jail Department	2,829	8,364	11,193	28,185	9,418	14,763
48	Other Departments	9,614	20,211	29,825	83,894	10,465	29,607
	Total—Madras ..	90,529	3,27,553	4,18,082	7,15,731	4,49,719	2,40,324
	Bombay.						
49	Public Works Department	26,929	12,83,838	13,10,767	17,58,887	25,73,803	39,62,
50	Police Department	1,58,608	2,007	1,60,615	2,01,103	1,30,439	70,038
51	Prisons Department	1,13,698	10,357	1,24,055	1,86,459	2,07,044	1,67,741
52	Other Departments	16,464	38,386	54,850	89,279	84,814	64,276
	Total—Bombay ..	3,15,699	13,34,588	16,50,287	22,35,728	29,96,100	42,64,629

Serial No.	Organization.	Purchases made during 1931-32. Textiles and Leather.	Engineering, hardware and miscellaneous stores.	Total for the year.	Total for the year. 1930-31.	1929-30.	1928-29.
	PROVINCIAL—*contd.* *Bengal.*						
53	Public Works Department.	684	1,17,301	1,17,985	30,516	51,868	4,93,533
54	Police Department	1,62,374	4,446	1,66,820	10,107	11,194	12,834
55	Jail Department ..	56,274	1,167	57,441	2,440	5,135	9,477
56	Other Departments	6,919	14,484	21,403	16,711	17,280	16,020
	Total—Bengal ..	2,26,251	1,37,398	3,63,649	59,774	85,477	5,31,864
	United Provinces.						
57	Public Works Department.	..	1,58,431	1,58,431	2,00,283	62,627	5,74,421
58	Other Departments	..	5,906	5,906	8,395	5,547	683
	Total—United Provinces.	..	1,64,337	1,64,337	2,08,678	68,174	5,75,104
	Punjab.						
59	Public Works Department.	10,642	20,35,515	20,46,157	20,27,212	25,01,551	16,36,034
60	Other Departments	1,112	2,24,476	23,558	71,259	36,800	52,977
	Total—Punjab ..	92,566	20,64,589	21,57,155	24,47,618	31,79,752	22,54,356
	Bihar and Orissa.						
61	Public Works Department.	182	83,051	83,233	1,06,979	74,201	21,465
62	Other Departments	1,369	21,644	23,013	68,904	15,290	10,554
	Total—Bihar and Orissa.	1,551	1,04,695	1,06,246	1,75,883	89,491	32,019
	Burma.						
63	Public Works Department.	..	2,997	2,997	1,089	16,482	9,970
64	Police Department..	1,69,331	88	1,69,419	1,82,745	50,828	(a) —6,563
65	Jail Department ..	24,046	..	24,046	4,382	3,244	3,075
66	Other Departments	..	595	595	4,153	13,270	7,037
	Total—Burma ..	1,93,377	3,680	1,97,057	1,92,369	83,824	13,519
	Central Provinces.						
67	Public Works Department.	..	41,205	41,205	75,015	1,67,127	1,73,544
68	Other Departments	4,600	9 256	13,856	23,573	14,735	22,968
	Total—Central Provinces.	4,600	50,461	55,061	98,588	1,81,862	1,96,512

Serial No.	Organization.	Purchases, made during 1931-32.			Total for the year.		
		Textiles and Leather.	Engineering, hardware and miscellaneous stores.	Total for the year.	1930-31.	1929-30.	1928-29.
	PROVINCIAL—*concld.* *Assam.*						
69	Public Works Department.	1,372	6,975	8,347	18,419	1,74,640	11,568
70	Police Department	1,38,989	4,513	1,43,502	59,612	76,155	47,676
71	Jail Department ..	10,799	1,132	11,931	11,633	11,190	9,313
72	Other Departments	22	2,915	2,937	7,800	16,179	5,483
	Total—Assam ..	1,51,182	15,535	1,66,717	97,464	2,78,164	74,040
73	Provincial Unclassified Items ..	11,407	..	11,407	16,277	29,529	..
	Total Provincial ..	10,87,162	42,02,836	52,89,998	62,48,110	74,42,092	81,82,367
	Indian States.						
74	Jaipur	..	1,02,857	1,02,857	6,84,277	14,19,946	1,65,099
75	Mysore	..	650	650	..	..	15,418
76	Bahawalpur ..	..	39,229	39,229	41,209	1,35,185	26,453
77	Hyderabad ..	..	4,813	4,813	6,963	2,834	28
78	Jamkhandi ..	..	3,332	3,332	1,849	1,063	..
79	Indore	..	1,185	1,185	795	..	..
80	Gwalior	619	4,335	4,954	18,438	..	..
81	Patiala	288	..	288	247	..	..
82	Jodhpur	..	35	35	..	..	..
	Total—Indian States.	907	1,56,436	1,57,343	7,53,778	15,58,578	2,06,998
	Quasi-public bodies.						
83	City Board, Mussoorie,	209	1,28,304	1,28,513	16,816	15,413	31,112
84	Municipal Committee, Simla.	..	10,106	10,106	39,888	85,095	62,167
85	Other Municipalities and District Boards.	83	66,814	66,897	51,266	43,263	40,097
86	Port Commissioners	..	11,069	11,069	16,119	6,666	2,334
87	Other Local Bodies	..	2,042	2,042	180	2,757	2,036
	Total.—Quasi-Public Bodies.	292	2,18,335	2,18,627	1,24,269	1,53,194	1,37,741
	British Government.						
88	Royal Airship Base, Karachi.	..	2,083	2,083	3,816	7,947	..
89	Air Ministry Works, Aden.	..	..	..	..	5,940	..
	Total British Government.	..	2,083	2,083	3,816	13,887	..

Serial No.	Organization.	Purchases made during 1931-32.			Total for the year.		
		Textiles and Leather.	Engineering, hardware and miscellaneous stores.	Total for the year.	1930-31.	1929-30.	1928-29.
	Abstract.						
	Central Army ..	69,67,846	68,55,642	1,38,23,488	1,05,28,210	1,18,92,230	1,32,74,047
	Central Civil ..	8,66,750	30,27,665	38,94,415	72,26,671	68,19,291	38,42,316
	Railways, State-worked	16,66,737	1,01,41,325	1,18,08,062	1,17,08,048	1,38,05,864	98,02,309
	Railways, Company-worked ..	24,414	7,62,775	7,87,189	10,83,001	12,27 323	5,93,739
	Railways, Indian State-worked ..	870	17,931	18,801	6,793	13,242	8,557
	Total Railways ..	16,92,021	1,09,22,031	1,26,14,052	1,27,97,842	1,50,46,429	1,04,04,605
	Provincial Governments	10,87,162	42,02,836	52,89,998	62,48,110	74,42,092	81,82,367
	Indian States ..	907	1,56,436	1,57,343	7,53,778	15,58,578	2,06,998
	Quasi-Public Bodies ..	292	2,18,335	2,18,627	1,24,269	1,53,194	1,37,741
	British Government ..	..	2,083	2,083	3,816	13,887	..
	GRAND TOTAL ..	1,06,14,978	2,53,85,028	3,60,00,006	3,76,82,696	4,29,25,701	3,60,48,074

APPENDIX VI.

Statement showing the value of the various classes of purchases (indigeneous and imported) during 1931-32, and three preceding years. (Vide *paragraph 25 of the Report.*)

Class of stores.	Total 1931-32.	Per-centage.	Total 1930-31.	Per-centage.	Total 1929-30.	Per-centage.	Total 1928-29.	Per-centage.
I.—TEXTILES AND LEATHER.								
(a) Stores purchased in Indian market.								
(i) Cotton—								
Indigenous	37,69,231	(75%)	51,11,441	(94·8%)	56,76,743	(97·4%)	60,62,761	(96·3%)
Imported	12,59,668	(25%)	2,78,346	(5·2%)	1,53,252	(2·6%)	2,35,184	(3·7%)
(ii) Woollen—								
Indigenous	32,42,331	(76·1%)	34,84,458	(95·6%)	39,09,782	(92·7%)	39,31,597	(99·1%)
Imported	10,16,586	(23·9%)	1,59,592	(4·4%)	3,05,959	(7·3%)	37,148	(0·9%)
(iii) Jute, hemp, etc.								
Indigenous	7,38,849	(61·1%)	6,72,083	(94·2%)	12,31,202	(97·7%)	12,88,918	(96·6%)
Imported	4,70,625	(38·9%)	41,558	(5·8%)	29,144	(2·3%)	45,454	(3·4%)
(iv) Leather—								
Indigenous	1,15,045	(99·7%)	65,387	(90·7%)	23,506	(86·7%)	17,613	(77·8%)
Imported	300	(0·3%)	6,676	(9·3%)	3,595	(13·3%)	5,025	(22·2%)
Total Indigenous	78,65,456	(74·1%)	93,33,369	(95%)	1,08,41,233	(95·7%)	1,13,00,889	(97·2%)
Total Imported	27,47,179	(25·9%)	4,86,172	(5%)	4,91,950	(4·3%)	3,22,811	(2·8%)
Total ..	1,06,12,635	..	98,19,541	..	1,13,33,183	..	1,16,23,700	..
(b) Stores purchased from Government Departments ..	2,343	..	17,616	..	3,109	..	1,273	..
Total—Textiles and Leather	1,06,14,978	..	98,37,157	..	1,13,36,292	..	1,16,24,973	..
II.—ENGINEERING AND MISCELLANEOUS STORES.								
(a) Stores purchased in the Indian market ..	2,53,51,149	..	2,77,86,082	..	3,15,76,652	..	2,43,26,784	..
(b) Stores purchased direct from outside India	31,672	..	56,964	..	..	..	25,500	..
(c) Stores purchased from Government Departments ..	2,207	..	2,493	..	12,757	..	70,817	..
Total—Engineering and Miscellaneous Stores ..	2,53,85,028	..	2,78,45,539	..	3,15,89,409	..	2,44,23,101	..
GRAND TOTAL ..	3,60,00,006	..	3,76,82,696	..	4,29,25,701	..	3,60,48,074	..

APPENDIX VII.

Value in rupees of stores purchased in each province during the year 1931-32 and three preceding years. (Vide *paragraph 27 of the Report.*)

Class of material and province in which purchased.	1931-32.	1930-31.	1929-30.	1928-29.
Cotton materials.				
United Provinces	14,78,764	20,06,836	27,80,063	22,44,072
Bombay	9,32,757	15,34,877	12,01,524	9,05,988
Bengal	8,14,237	6,61,909	6,16,830	7,57,651
Madras	6,83,173	8,45,715	9,09,350	12,02,804
Delhi	1,36,391	1,11,601	2,23,005	7,36,265
Punjab	34,413	2,22,471	98,192	4,31,356
Central Provinces	7,005	3,125	..	12,310
Burma	..	3,150	..	..
Jaipur	..	103	..	..
Bihar and Orissa	..	..	1,031	..
Baroda	..	..	..	5,126
Mysore	..	..	..	2,373
Total—Cotton materials ..	40,86,740	53,89,787	58,29,995	62,97,945
Woollen materials.				
United Provinces	10,51,185	17,20,446	7,46,597	14,24,254
Punjab	8,68,826	5,59,242	6,52,791	9,08,900
Madras	7,32,924	7,40,986	10,40,313	2,06,541
Bombay	3,59,189	3,32,494	10,91,841	10,86,474
Bengal	1,18,805	2,81,600	5,43,239	3,06,473
Kashmir State	4,983	..	1,38,902	..
Mysore	..	9,282	..	..
Delhi	..	..	2,058	36,103
Total—Woollen materials ..	31,35,912	36,44,050	42,15,741	39,68,745
Jute, flax and hemp materials.				
Bengal	7,38,137	6,34,942	11,76,276	11,41,154
United Provinces..	67,526	12,399	4,144	88,334
Bombay	47,826	50,993	67,630	73,357
Delhi	4,492	5,098	10,076	18,289
Madras	854	..	630	2,768
Punjab	239	10,209	1,590	10,470
Total—Jute, flax and hemp materials	8,59,074	7,13,641	12,60,346	13,34,372
Leathergoods.				
United Provinces..	89,464	35,030	21,070	9,564
Bengal	21,593	18,885	3,253	1,856
Punjab	1,836	92	(*a*)—2,014	5,570
Madras	1,230	12,332	383	440
Bombay	1,222	3,438	4,409	4,908
North-West Frontier Province ..	..	1,800	..	..
Gwalior	..	486	..	300
Total—Leathergoods ..	1,15,345	72,063	27,101	22,638

(*a*) Adjustment owing to cancellations of previous year's orders.

Class of material and province in which purchased.	1931-32.	1930-31.	1929-30.	1928-29.
Engineering, Hardware and Miscellaneous stores.				
Bengal	1,10,42,688	1,11,81,095	1,50,31,422	1,12,69,682
Bombay	92,40,894	1,14,14,108	1,20,74,685	1,02,63,817
Punjab	27,46,878	18,01,754	19,86,318	14,23,484
Madras	7,36,335	10,09,347	3,40,438	3,25,207
United Provinces	6,35,396	8,26,440	7,36,335	1,87,367
Delhi	5,54,345	4,58,387	3,53,232	5,38,494
Burma	3,39,127	8,53,617	4,03,108	80,336
Central Provinces	22,204	19,206	61,187	44,178
Mysore	16,595	87,529	3,56,604	..
Bihar and Orissa	15,960	15,742	2,33,323	1,89,456
Assam	488	1,17,600	..	4,222
Aundh State	39	..	..	541
Hyderabad	..	889	..	..
Ajmer-Merwara	..	368	..	..
Total—Engineering, Hardware and Miscellaneous stores.	2,53,50,949	2,77,86,082	3,15,76,652	2,43,26,784

Total.	1931-32.	1930-31.	1929-30.	1928-29.
Bengal	1,27,35,460	1,27,78,431	1,73,71,020	1,34,76,816
Bombay	1,05,81,888	1,33,35,910	1,44,40,089	1,23,34,544
Punjab	36,52,192	25,93,768	27,36,877	27,79,780
United Provinces	33,22,335	46,01,151	42,88,209	39,53,591
Madras	21,54,516	26,08,380	22,91,114	17,37,760
Delhi	6,95,228	5,75,086	5,88,371	13,29,151
Burma	3,39,127	8,56,767	4,03,108	80,336
Central Provinces	29,209	22,331	61,187	56,488
Mysore	16,595	96,811	3,56,604	2,373
Bihar and Orissa	15,960	15,742	2,34,354	1,89,456
Kashmir State	4,983	..	1,38,902	..
Assam	488	1,17,600	..	4,222
Aundh State	39	..	..	541
North-West Frontier Province ..	..	1,800	..	..
Hyderabad	..	889	..	..
Gwalior	..	486	..	300
Ajmer-Merwara	..	368	..	..
Jaipur	..	103	..	..
Baroda	..	..	..	5,126
Total ..	3,35,48,020	3,76,05,623	4,29,09,835	3,59,50,484

APPENDIX VIII.

Lists of Items of Stores purchased on " Rate " and " Running " contracts.

(*Vide* paragraph 29 of the Report).

A. Items of stores for which " Rate " and " Running " contracts were entered into by the Headquarters Office during the year 1931-32.

TEXTILE AND LEATHER STORES.

(Cotton.)

1. Bags, Postal.
2. Bags, kit, waterproof.
3. Bags, ration, waterproof.
4. Bandage, cloth.
5. Cloth, grey, domestic.
6. Cloth, jaconet.
7. Cloth, madapalam.
8. Cloth, sheeting.
9. Cloth, sponge.
10. Caps W. P., Indian and Burman, with and without hoods.
11. Cotton waste, white, teased and unteased.
12. Cotton waste, coloured.
13. Dosuti.
14. Drill, blue, grey, khaki and white.
15. Durries.
16. Dusters.
17. Fringes, blue.
18. Gauze absorbent, cotton white.
19. Haversacks, khaki.
20. Holland cloth.
21. Lining cloth.
22. Long cloth, grey and bleached.
23. Netting, mosquito.
24. Pugri cloth, khaki, red and blue.
25. Pugri cloth, white.
26. Putties cotton, blue.
27. Sheets, bed.
28. Tapes.
29. Thread, sewing.
30. Towels, hand.
31. Turbans, red.
32. Twill, cotton, khaki.

33. Twine.

34. Umbrellas.

35. Wicks.

36. Wool cotton, absorbent.

(Woollen.)

37. Blankets.

38. Broad cloth, superfine.

39. Bunting cloth, red and green.

40. Caps, balaclava.

41. Drawers, woollen.

42. Felt, white.

43. Flags, bunting, red and green.

44. Flannel, fine.

45. Jerseys.

46. Jackets, cardigan.

47. Putties, woollen.

48. Serge, blue and white.

49. Twill cloth of colours.

(Jute, Hemp and Miscellaneous.)

50. Bags, mail, postal.

51. Bags, nose.

52. Buttons, gold.

53. Coir yarn.

54. Cordage, manilla.

55. Lace, gold.

56. Paulins, flax and jute.

57. Ropes, manilla, head and heel.

58. Tassels, gold.

59. Uniforms, making up of, including supply of all garments.

(Leathergoods.)

60. Bags, cash delivery.

1. Belts, waist and with pouch.

62. Portfolios, R. M. S.

ENGINEERING AND MISCELLANEOUS STORES.

63. Acids, Sulphuric, Nitric and Hydrochloric.

64. Alumina ferric.

65. Badges, breast, for postmen.

66. Ball, roller and Timker bearings.

67. Batteries, dry, for electric torches.

68. Belting, train lighting, of sizes.

69. Boards, distribution.

70. Boards, fuse.

71. Boards, plywood, backing.

72. Boards, sign and letter-box plates enamel.

73. Boxes, tin and trays, tin, for keeping cash.

74. Boxes, tin, for Insurance seals and trays, tin, for letters (for postal use).

75. Bricks, fire.

76. Bugles, stamp dampers and other small articles of Postal use.

77. Buttons, gilt, brass.

78. Cables, V. I. R. insulated, braided single core, 250 volts, 600 megohm grade, of sizes.

79. Cables, V. I. R. insulated, non-association grade, 300 megohms.

80. Cables, V. I. R. insulated; tough rubber sheathed, single core, 250 volts, 600 megohm grade, of sizes.

81. Cables, V. I. R. insulated, *lead sheathed*, single core and two core, flat, 250 volts, 600 megohm grade, of sizes.

82. Cables, V. I. R. insulated, *special metal alloy sheathed*, single core and two core flat, 250 volts, 600 megohm grade, *suitable for the Henley wiring system, of sizes.*

83. Cables, rubber insulated, *lead sheathed*, two core flat, 250 volts, 600 megohm grade, with Bonding wire, of sizes.

84. Cables, rubber insulated, *lead sheathed*, single core, circular, 2500 megohm grade.

85. Cables, Flame proof, single core, V. I. R. insulated, 600 megohm grade.

86. Candles, wax.

87. Carsac elements, No. 1 size (for Telegraph Department, and E. I. Railway).

88. Carsac elements, No. 2 size (G. I. P. Railway).

89. Carsac elements, "Kodak" combined type No. 1 (for E. I. Railway).

90. Ceiling roses.

91. Cells, caustic soda, Edison type, 500 amps.

92. Cells, dry Inert (Indian Telegraph Department, sizes 19 and 21).

93. Cells, dry, Inert (Siemens Bros. Nos. 55 and 60 and "Titania" Brand sizes 1 and 2).

94. Cells, Wet "A. D."—Carbon and zinc elements (for G. I. P. Railway).

95. Cement, ordinary and rapid hardening.

96. Charpoys, galvanized iron, for M. E. S.

97. Chests, cash, iron, for Posts and Telegraphs Department.

98. Conduit pipes and fittings, sizes.

99. Connectors, porcelain.

100. Cooking ranges.

101. Cords, flexible, twin core, *cotton and silk braided*, 600 megohm grade.

102. Cords, flexible, twin core, *Workshop finish*, 600 megohm grade.

103. Cords, flexible, two and three core, Tough rubber sheathed, 600 megohm grade.

104. Creosote.

105. Cutouts, porcelain and iron clad.

106. Cutlery articles (for Post and Telegraph Department).

107. Disinfectants.

108. Fans, electric, ceiling, A. C. and D. C.

109. Fans, electric, table, A. C. and D. C.

110. Feed pipes.

111. Files.

112. Fire extinguishers.

113. Fittings, carriage, light (globes, lampholders, shades etc., for G. I. P. Railway).

114. Fittings for doors and windows.

115. Fittings, vacuum brake (rubber and non-rubber).

116. Frames, steel, crittal, for windows (for M. E. S.)

117. Gas, acetylene, dissolved.

118. Gas, carbonic acid.

119. Graphite.

120. Handcuffs.

121. Hose canvas, ordinary, and fire appliances.

122. Hose, India rubber, armoured and plain.

123. Insulating materials :—

(a) Cotton tape, Egyptian, of sizes.

(b) India rubber strip, pure para.

(c) Tape, Adhesive, black, of sizes.

(d) Varnish, insulating, air drying and stoving "Ohmaline."

124. Jars, glass, for Leclanche and Minotti batteries (for the Indian Telegraph Department).

125. Jars, earthenware, for Leclanche cells (for N. W. Railway).

126. Lacquer, clear, cellulose.

127. Lacquer, clear, cellulose solvent (carmoloid).

128. Lamp brackets.

129. Lamp holders.

130. Lamps, electric, automobile.

131. Lamps, electric, carbon filament.

132. Lamps, electric, Locomotive and cablights.

133. Lamps, electric, metal filament, gas filled, general lighting.

134. Lamps, electric, metal filament, vacuum type, general lighting.

135. Lamps, electric, metal filament, train lighting, gas filled type

136. Lamps, electric, metal filament, train lighting, vacuum type.

137. Lamps, oil, and tin lanterns, for Posts and Telegraphs Department.

138. Lanterns, hurricane and chimneys.

139. Letter boxes, for Posts and Telegraphs Department.

140. Liquid chlorine, chemically pure for waterworks use.

141. Meters, electric, house service, alternating current, watt hour, single phase, two-wire.

142. Meters, electric, house service, direct current, ampere hour, two-wire.

143. Meters, water.

144. Motor cars, trucks and spare parts :—

(a) Chevrolet truck chassis, passenger cars and spare parts.

(b) Ford motor cars, trucks, chassis, etc., Canadian Ford spare parts, and Rucks-tell axle parts.

(c) Morris cars, and commercial vehicles, and spare parts.

(d) Wolseley cars, and spare parts.

(e) Thornycroft spare parts for 'A 4' and 'A 5' medium six-wheeled lorries.

145. Oil, castor.

146. Oil, cocoanut.

147. Oil, Fuel.

148. Oil, gas-making.

149. Oil, kerosene.

150. Oil, Linseed, raw and double-boiled.

151. Oils, lubricating and greases.

152. Paints, enamels varnishes, etc.

153. Petrol.

154. Pig iron.

155. Pipes and specials, C. I.

156. Pipes and fittings, M. S. or W. I.

157. Pipes and fittings, Victaulic.

158. Pipes and specials, stoneware.

159. Pipes, Wrought iron.

160. Points, rodding.

161. Poles, steel tubular :—

(a) Mannesmann type, of sizes.

(b) Hercules Reinforced type, reduced and shrunk, of sizes.

162. Polish, metal.

163. Road Dressing materials.

164. Roofing materials—"Ruberoid", "Malthoid", etc.

165. Rosin.

166. Scales and weights.

167. Seals, lead.

168. Shades, Enamelled iron, and white conic, opal.

169. Shades, vellum, for table standards.

170. Sheets, asbestos, corrugated and flat, tiles (Trafford) and fixing accessories, etc.

171. Shellac.

172. Signals, fog, detonating.

173. Soaps, soft and bar.

174. Spearheads and brass bells for Posts and Telegraphs Department.

175. Spirit, Methylated, denatured.

176. Standards, table, electric, Bakelite.

177. Steel sections for Railways.

178. Steel sections for M. E. S.

179. Sulphate of alumina.

180. Sulphate of copper.

181. Switches, tumbler, single and double pole, House-wiring and train-lighting.

182. Switches with fuses, iron clad, double pole.

183. Target apparatus.

184. Tools, track, for Railways.

185. Turpentine.

186. Tyres and tubes, rubber, for bicycles.

187. Tyres and tubes, rubber, for motor vehicles, and bicycles (for Army only).

188. Valves, sluice, water.

189. Voltoids.

190. Wall plugs and sockets.

191. Wire, binding, steel, tinned for G. I. P. Railway.

192. Wire, copper, bare, solid, hard drawn of sizes.

193. Wire copper, single, and double cotton covered and double silk covered, of sizes for winding purposes.

194. Wire gauze, galvanized iron.

195. Wire, mild steel, round, black, annealed, and wire, mild steel, galvanized.

196. Wire, steel, galvanized, solid, for signals.

197. Wire, strand, galvanized, fencing.

198. Wire, wove, galvanised iron.

199. Wood preservatives.

200. Zincs, cylindrical, cutaway pattern for No. 2. Leclanche cells (for G. I. P. Railway).

B.—*Contracts entered into by the Controller of Purchase, Calcutta.*

TEXTILE STORES.

1. Badges of sorts.
2. Bags, canvas, for lineman's tools.
3. Bags, canvas, of sizes.
4. Bags, dak, green, canvas, with English waterproof.
5. Bags, gunny, of sizes.
6. Bags, gunny, ' B ' twill, of sizes.
7. Bags, gunny, D. W.
8. Bags, gunny, twill, of sizes.
9. Bags, leather, cash.
10. Bags, tool, with straps.
11. Bags, twill, Liverpool.
12. Batons, frog.
13. Batons, of sorts.
14. Belts, revolver.
15. Belts, Sam browne.
16. Belts, waist.
17. Blankets, scarlet, pure wool.
18. Boots, brown, chrome.
19. Breeches, drill, khaki.
20. Buttons of sorts.
21. Canvas, cotton, khaki.
22. Canvas, country.
23. Canvas, English.
24. Canvas, jute.
25. Caps, uniform.
26. Carbine sling.
27. Cloth, baize, green.
28. Cloth, brattice.
29. Cloth, bunting.
30. Cloth, *dosuti*, unbleached.
31. Cloth, drill, khaki.
32. Cloth, *dungaree*, white, unbleached.
33. Cloth, hessian.
34. Cloth, long, bleached.
35. Cloth, *mulmul*.
36. Cloth, nainsook.
37. Cloth, painting.
38. Cloth, sheeting, unbleached.
39. Cloth, sponge.

40. Cloth, table, cotton, damask.
41. Coats, drill, khaki.
42. Coats, serge, khaki.
43. Cotton waste, white, teased.
44. Dusters, cotton.
45. Figures and letters; red embroidered.
46. Fringes, dark blue.
47. Greatcoats, khaki.
48. Hats, felt, Christy.
49. Hats, sola, khaki.
50. Helmets, khaki.
51. Helmets, Wolseley.
52. Jute combings.
53. Jute, dressed.
54. Jute, gasketting.
55. Knickers, drill, khaki.
56. Lanyards, khaki.
57. Line, fish.
58. Line, log.
59. Nets, mosquito, of sizes.
60. Newar, khaki.
61. Paulins, flax canvas, of sizes.
62. Pouches of sorts.
63. Putties, spiral, Fox.
64. Rope, coir.
65. Rope, jute.
66. Rope, Manilla.
67. Sash, red, worsted.
68. Serviettes, cotton, damask.
69. Shorts, drill, khaki.
70. Slings, bugle.
71. Stocking tops, khaki.
72. Straps, G. C.
73. String, coir.
74. Sword scabbard.
75. Thread, sewing, linen, white and black.
76. Trousers, drill, khaki.
77. Twine, flax.
78. Twine, hemp.

79. Twine, jute.
80. Twine, sailmakers.
81. Twist, cotton, for wicks.
82. Umbrellas, trolly.
83. Umbrellas, waterproof.
84. Waist coat, dark green.
85. Waist coat, red.
86. Wicks, cotton, castor oil, of sizes.
87. Wicks, cotton, kerosene oil, of sizes.
88. Yarn, spun.

ENGINEERING AND MISCELLANEOUS STORES.

89. Accumulators.
90. Axes, felling.
91. Belting, balata.
92. Bill hooks.
93. Borax.
94. Bricks, fire.
95. Brooms, cocoanut.
96. Brushes, carbon.
97. Brushes, forme.
98. Brushes, wire, steel.
99. Cables, electric.
100. Capping, teakwood.
101. Caps, ebonite.
102. Caps for lamps.
103. Cases, venesta, packing.
104. Casing, teakwood.
105. Ceiling roses.
106. Cement.
107. Cleaners, vacuum.
108. Cleats, porcelain.
109. Clocks.
110. Coke, hard.
111. Condensers.
112. Cords, electric.
113. Covers, bakelite, for switches, tumbler.
114. Crockery.
115. Cutlery.
116. Cutouts, oblong.

117. Dahs, transplanting.
118. Drill twist.
119. Drills, hand, miller.
120. Emery cloth.
121. Files.
122. Flour, fine.
123. Handcuffs.
124. Handles for phowra hs, pickaxes and reamers .
125. Heaters, wax, electric.
126. Hinges, steel.
127. Hose pipe, I. R.
128. Hydrometers.
129. Lamp holders.
130. Lamp locks.
131. Lamps, C. B. switchboard.
132. Lamps, hand.
133. Lamps, table.
134. Lamps, wall.
135. Lathies, of sizes.
136. Lead sleeves.
137. Link clips.
138. Meters, telephone.
139. Millimmeters.
140. Oil, blancol.
141. Packing, asbestos.
142. Pellets, carbon.
143. Pickaxes.
144. Phowrahs.
145. Pliers, cutting and twisting.
146. Pliers, round nose.
147. Plugs, 2 and 3 ways.
148. Plugs, wood.
149. Powder, disinfecting ***carbolite.***
150. Powder, Westolite.
151. Salamoniac.
152. Sand.
153. Screw drivers.
154. Screws, wood, iron.
155. Soap, Palmolive.

156. Soda, caustic.
157. Staples, *elite.*
158. Switches, dial.
159. Switches, knife, D. P.
160. Tape, paper.
161. Thermometers.
162. Timepieces.
163. Tubing, rubber, armoured.
164. Utensils, aluminium.
165. Watches, stop.
166. Whistles, brass.
167. Wire, barbed.
168. Wire, Boudot.
169. Wire, fuse.
170. Wire jumpers.
171. Wire, maconite.

C.—Contracts entered into by the Controller of Purchase, Bombay.

TEXTILE STORES AND LEATHER.

1. Buttons, black.
2. Chevrons, one and three stripes.
3. Cloth, blue for overall.
4. Cloth, calico, bleached.
5. Cloth, calico, Naphthol red.
6. Cloth, cheese.
7. Cloth, chintz, for lining coats.
8. Cloth, cotton, *majarpath.*
9. Cloth, cotton, Naphthol red.
10. Cloth, drill, bleached.
11. Cloth, long, bleached, white.
12. Cloth, sheeting, unbleached.
13. Cloth, table, damask, white.
14. Clothing, uniform.
15. Cocoanut husks.
16. Coir, loose, dry, clean.
17. Coir, yarn, dry.
18. Cotton, clean.
19. Cotton in balls.
20. Drill, white, grey.
21. Leather buffalo, tanned.

22. Leather, cow, tanned.
23. Linen, chalk, cotton.
24. Oakum, black.
25. Oakum, white.
26. Saries, cotton, blue.
27. Serges, blue.
28. Tape, cotton, webbing.
29. Turbans, cotton, cloth, Yeola red.
30. Wicks, cotton.

ENGINEERING AND MISCELLANEOUS STORES.

31. Baskets, cane, thick and thin.
32. Bamboos, solid.
33. Batteries, dry " Ever-ready ".
34. Batteries, dry, " Ever-ready " for telephone apparatus.
35. Bearings, ball.
36. Beeswax.
37. Blocks, rubbing, mercury.
38. Bolts and nuts.
39. Brooms, brass, broom head.
40. Brooms, Goa, large.
41. Brooms, hair, broom head.
42. Brushes, assorted.
43. Brushes, dust, hand.
44. Brushes, scrubber, base.
45. Brushes, scrubber, hand.
46. Brushes, tar, head.
47. Buckets, galvanized sheet.
48. Cables and flexible cords, Admiralty pattern.
49. Candles, Lion Brand.
50. Canes, rattan, Singapore.
51. Cells, dry.
52. Charcoal.
53. Clocks.
54. Cocks, bib, brass.
55. Cocks, locking, brass.
56. Cocks, stop.
57. Emery cloth.
58. Fittings, steam and water.
59. Gum, benzoin, sandarac.
60. Gum, superior quality.
61. Hose, India rubber, delivery.

62. Hoses.
63. Katol, Japanese.
64. Kettle, tea, aluminium.
65. Lime, fine, dry.
66. Lime, unslaked.
67. Marine stores, miscellaneous.
68. Nails, wire, iron.
69. Oil, kerosene.
70. Paper, sand, glass.
71. Polish, metal.
72. Powder, plate, Goddard.
73. Rosin.
74. Timepieces.
75. Sheets, V. I. R.
76. Screws, wood, iron and brass.
77. Silver, refined, China.
78. Sulphate of ammonia.
79. Valves, wheel, gunmetal.

D.—Contracts entered into by the Controller of Purchase, Karachi.

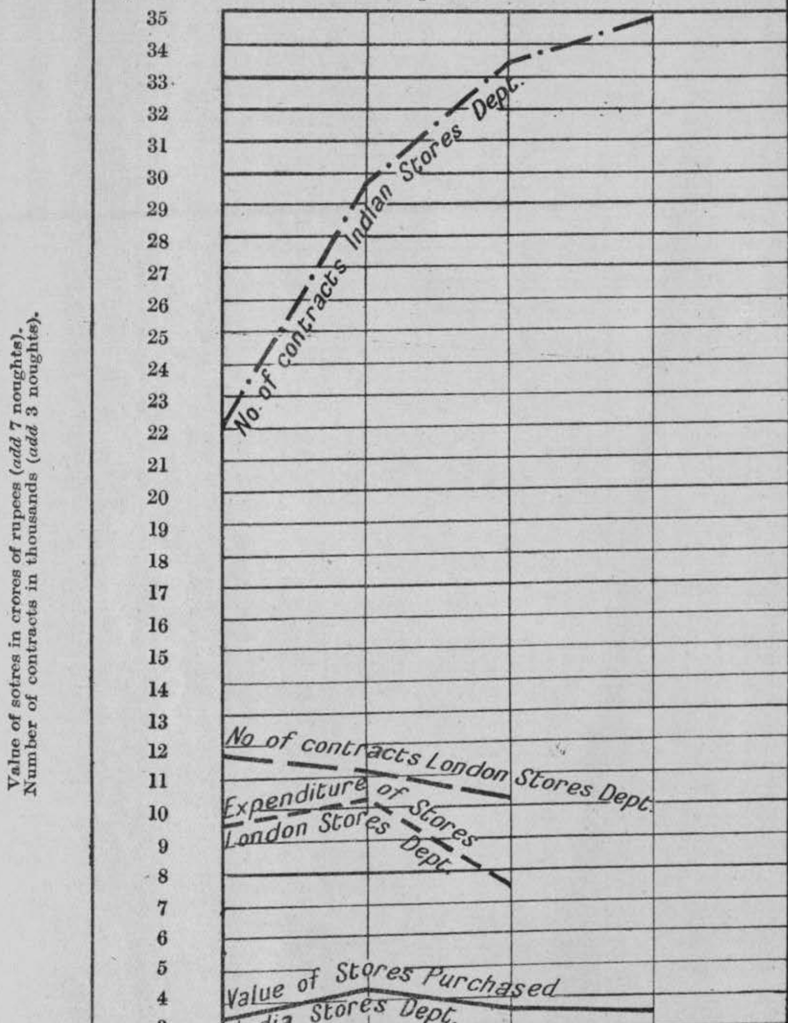
1. Asbestos boiler door joints.
2. Blades, hacksaw.
3. Bolts, nuts and washers, black.
4. Bolts, tower, iron and brass.
5. Brushes, paint.
6. Carbide, calcium.
7. Clamps, 'U' bolts.
8. Cocks, brass, bib.
9. Cocks, stop, G. I. and brass.
10. Crucibles, foundry, Morgans.
11. Cups, grease.
12. Emery cloth.
13. Files.
14. Hinges.
15. Nails, wire, iron.
16. Panes of glass, plain and frosted.
17. Rivets, M. S.
18. Screws, wood, iron and brass.
19. Shackles.
20. Soda ash.
21. Soda, caustic.
22. Spanners, single and double ended.
23. Thimbles, G. I.
24. Tubes, copper.
25. Valves, wheel, gunmental.

APPENDIX IX.

VALUE OF STORES PURCHASED AND NUMBER OF CONTRACTS PLACED BY THE LONDON AND INDIAN STORES DEPARTMENTS.

(*Vide* paragraph 33 of the report.)

The London Stores Department figures represent expenditure on stores and freight converted into Indian currency at a uniform rate of 1*s.* 6*d.* to the rupee. The Indian Stores Department figures represent the value of contracts placed.



	1928-29.	1929-30.	1930-31.	1931-32.
No. of contracts.				
London Store Department.	11,654	11,053	10,257	..
Indian Store Department.	21,922	29,767	33,311	34,928
Value in thousands of Rupees.				
London Store Department.	94,887	1,00,943	75,277	..
Indian Stores Department.	36,048	42,926	37,682	36,000

APPENDIX X.

Comparative statement of purchases made by the London and Indian Stores Department.

(The figures are in thousands of rupees.)

(*Vide* paragraph 34 of the Report.)

Indenting Departments.	Textiles and Leather stores.		Engineering, Hardware and miscellaneous stores.		Other classes of stores. (*a*)		Total.	
	London Stores Department.	Indian Stores Department.	London Stores Department.	Indian Stores Department.	London Stores Department.	Indian Stores Department.	London Stores Department.	Indian Stores Department.
1. Central Departments.— Army—								
1928-29	3,794	6,975	18,695	6,300	7,397	..	29,885	13,275
1929-30	3,567	4,492	23,310	7,400	3,576	..	30,453	11,892
1930-31	3,640	3,494	16,028	7,034	5,719	..	25,387	10,528
2. Central Departments.— Civil—								
1928-29	27	1,607	4,317	2,235	3,192	..	7,536	3,842
1929-30	63	1,402	1,208	5,417	3,180	..	4,451	6,819
1930-31	18	1,205	976	6,020	2,310	..	3,304	7,225
3. Railways.—								
1928-29	104	2,045	41,986	8,360	136	..	42,226	10,405
1929-30	20	4,117	24,253	10,929	380	..	24,653	15,046
1930-31	37	3,824	13,147	8,974	127	..	13,311	12,798
4. Provincial Governments.—								
1928-29	138	998	4,635	7,184	1,333	..	6,106	8,182
1929-30	140	1,319	16,186	6,123	1,366	..	17,692	7,442
1930-31	72	1,311	4,183	4,938	1,193	..	5,448	6,249
5. Indian States, Foreign Governments and *Quasi*-Public bodies.—								
1928-29	..	(*b*)	..	344	..	..	..	344
1929-30	..	6	..	1,721	..	..	..	1,727
1930-31	..	3	..	880	..	..	..	883
Total—								
1928-29	4,063	11,625	69,632	24,423	12,058	..	85,753	36,048
1929-30	3,790	11,336	64,957	31,590	8,502	..	77,249	42,926
1930-31	3,767	9,837	34,334	27,846	9,349	..	47,450	37,683

N.B.—The figures of the India Store Department, London, have been converted at the rate of 1*s.* 6*d.*=Re. 1/-.

(*a*) Stores not dealt with by the Indian Stores Department, *e.g.*, Medical stores, munitions, stationery and printing, stamps, currency, foodstuffs, etc.

(*b*) Items below Rupees one thousand in value.

APPENDIX XI.

List of specifications framed by the Indian Stores Department current at the end of the year 1931-32.

(*Vide* paragraph 36 of the Report.)

INDEX.

Section No.	Name of Stores. Main Head.	Sub-head.	Classification reference.
1	Bridgework	....	A.
2	Engineers' plant (excluding petty tools)	....	B.
3	Workshop machinery and heavy tools	....	C.
4	Ballast and permanent way materials ..	....	D.
5	Rolling stock	....	E.
6	Station materials and fencing	....	F.
7	Tools and stores ..	(*a*) Tools	G/Tools.
		(*b*) Stores—	
		(*i*) Chemicals	G/Chemicals.
		(*ii*) Lamps and lamp fittings	G/Lamps.
		(*iii*) Leather and India rubber goods ..	G/Leather.
		(*iv*) Metals	G/Metals.
		(*v*) Miscellaneous ..	G/Miscellaneous.
		(*vi*) Painters' stores (oils and paints) ..	G/O. P.
		(*vii*) Timber	G/Timber.
		(*viii*) Hardware; copper, tin and zincware ..	G/Ware.
		(*ix*) Waterworks stores ..	G/W.W.
		(*x*) Cloth, clothing and equipment ..	G/Textiles.
		(*xi*) Stationery	G/Stationery.
		(*xii*) Drawing, mathematical and surveying instruments ..	G/Instruments.
		(*xiii*) Printing presses and materials	G/Prints.
		(*xiv*) Sanitary stores ..	G/Sanitary.
		(*xv*) Fuel	G/Fuel.
		(*xvi*) Furniture	G/Furniture.
		(*xvii*) Building materials ..	G/Buildings.
8	Electrical plant and materials	....	H.
9	Power and Industrial plant	....	P. I.

List of Indian Stores Department General Specifications current at the end of the year 1931-32.

Basic No.	Description.	Current edition.
	BRIDGEWORK, A.	
A-33	Steelwork	A-33-J.
A-34	Steel sheet piling with clutch (joist pattern)	A-34-B.*
A-35	Structural steel, plates, sections, *e.g.*, angles, tees, joists, channels, etc., and bars	A-35-J.
A-40	Bridgework	A-40-D.
A-48	Tanks and staging	A-48-D.*
A-49	Steel welded tanks with staging welded or rivetted	A-49.
A-52	Aeroplane hanger	A-52.
	ENGINEERS PLANT, B.	
B-50	Loco-multitubular boiler	B-50-C.
B-51	Portable hand 5-ton operated crane for 5′—6″ gauge railway track	B-51
B-52	Scotch hand derrick crane constructed of steel	B-52
B-53	Hand operated overhead travelling and traversing crane	B-53-A.
	WORKSHOP MACHINERY AND HEAVY TOOLS, C.	
C-29	Machine tools—first class	C-29
C-31	Machine tools	C-31
	BALLAST AND PERMANENT-WAY MATERIALS, D.	
D-1	Steelwork for light railway track for construction work	D-1-C.
D-2	Tip trucks for 1′—6″, 2′—0″ and 2′—6″ gauge railway, contractors type	D-2-C.
D-6	Built-up points and crossings complete with wing rails, liver boxes, and all other fittings	D-6
D-15	Steel fishbolts and nuts	D-15
D-16	Steel dog spikes	D-16
D-17	Steel round spikes for rail chairs	D-17
D-18	Steel screw spikes for permanent way	D-18
	ROLLING STOCK, E.	
E-28	Weigh-bridge	E-28
E-29	Engine turntable	E-29-A.
E-32	Steam locomotive crane	E-32
E-37	Laminated springs	E-37-B.
E-38	Cast steel wheels with axles for 2′—6″ gauge	E-38
E-42	M. S. rivets	E-42-D.
E-47	M. S. bolts, nuts and washers, black and galvanised	E-47-B.

Basic No.	Description.	Current edition.
	ROLLING STOCK, E.—*contd.*	
E-48 ..	.. Cast steel wheels and axles for light tip trucks and unimportant works	E-48
E-49 ..	.. Cast iron superheater headers for locos, for railways	E-49-A.
E-50 ..	.. Steel tyres for locomotives, tenders, carriages and wagons	E-50-B.*
E-53 ..	.. Axle boxes, cast steel, for railway rolling stock	E-53
E-54 ..	.. Pulley block for wire and manilla rope ..	E-54
E-55 ..	.. Vacuum Gauge 6″ Single	E-55†
	TOOLS, G.	
G/Tools 1	.. Tools for earthwork, etc. (picks and beaters, kudalies, powrahs, mamooties or hoes, sledge and other hammers, jumper and drill steel)	G/Tools 1
„ 2	.. Anvils	„ 2
„ 3	.. Shovels	„ 3†
	CHEMICALS, G.	
G/Chemicals 9	.. Nitric acid, commercial	G/Chemicals 9
„ 11	.. Hydrochloric acid, commercial	„ 11
„ 12	.. Hydrochloric acid, pure	„ 12
„ 14	.. Sulphuric acid, concentrated, for accumulators	„ 14
„ 15	.. Sulphuric acid, commercial	„ 15
„ 16	.. Alumino ferric	„ 16
„ 17	.. Sulphate of alumina	„ 17
„ 18	.. Copper sulphate	„ 18-B.*
„ 19	.. Potassium cyanide for surface hardening of tools	„ 19
„ 20	.. Acetylene gas (dissolved) for industrial purposes	„ 20†
„ 22	.. Chloride of Lime (bleaching powder) ..	„ 22†
„ 23	.. Calcium carbide	„ 23
	LEATHER AND INDIA RUBBER GOODS, G.	
G/Leather 38	.. Vacuum brake rubber fittings for use on railways	G/Leather 38
„ 39	.. Solid tyres for cycles	„ 39-A.
„ 40	.. Solid tyres and tyre bands for tractors, lorries, etc.	„ 40-C.
„ 41	.. Pneumatic tyres, outer covers and inner tubes, etc.	„ 41-D.
„ 42	.. Pneumatic tyres, outer covers and inner tubes, for cycles	„ 42-A.

Basic No.		Description.	Current edition.
		LEATHER AND INDIA RUBBER GOODS, G.—*contd.*	
G/Leather	43	.. Leather, buffalo and cow and sheep skin ..	G/Leather 43
„	45	.. Meshas	„ 45
„	46	.. Leather belting	„ 46
„	47	.. Boots, ankle (followers)	„ 47-A.*
„	48	.. Boots, ammunition No. 5 quality	„ 48-A.*
		METALS, G.	
G/Metals	9	.. Manganese steel castings	G/Metals 9
„	16	.. Mild steel rods for ferro-concrete work ..	„ 16-D.*
„	17	.. Case hardening and welding quality steel bars and billets	„ 17
„	21	.. Short link chains (iron welded) for all services except marine	„ 21-B
„	40	.. Tinned plates	„ 40-A.
„	41	.. Sheets mild steel, galvanized, flat, corrugated and ridging	„ 41-D.
„	42	.. Sheets, plain galvanised iron	„ 42
„	45	.. Sheets, milled lead	„ 45-A.
„	46	.. Pig lead	„ 46
„	48	.. Pig iron	„ 48
„	51	.. Small ropes or cords of steel wire	„ 51
„	52	.. Copper alloy for carriage and wagon axle-box brasses	„ 52
„	53	.. Soft solder	„ 53-A.
„	54	.. Tin sticks for tinnings, cooking pots and similar purposes	„ 54-A.
„	55	.. Tin in ingots	„ 55
„	56	.. Copper in ingots	„ 56
„	57	.. Antifriction metal for locomotive, carriage and wagon purposes	„ 57-A.
„	58	.. Copper sheets, annealed, for spinning or cold working	„ 58-A.
„	59	.. Brass sheets, annealed, for spinning or cold working	„ 592A.
„	60	.. Zinc sheets	„ 60
„	61	.. Bearing metal for axles of railway rolling stock	„ 61
„	62	.. Brazing solder	„ 62
„	63	.. Silver solder	„ 63
„	67	.. Balls and rollers, steel, and ball and roller bearings	„ 67

Basic No.		Description.	Current edition.
		METALS, G.—*contd.*	
G/Metals	68	Brass bars for screwing and machining	G/Metals 68
,,	69	High tensile brass bars and sections, grade 'B', 35 tons per sq. in. quality	,, 69
,,	70	High tensile brass bars and sections, grade 'A', 30 tons per sq. in. quality	,, 70
,,	71	Antimony ingots	,, 71-A.
		MISCELLANEOUS, G.	
G/Misc.	1	Padlocks and locks, box drawers, etc.	G/Misc. 1-E.
,,	15	Safes, burglar resisting, non-fire resisting	,, 15
,,	17	Brush sweeping	,, 17
,,	18	Brush for painting letter boxes	,, 18
,,	19	Brush for cleaning stamps	,, 19-A.
,,	25	Buttons, hollow and badges, brass, gilding metal, nickel silver, german silver, white metal, silver and 'bronzed'	,, 25
,,	30	Hand chemical fire extinguisher	,, 30-A.
,,	32	Lead seals for general purposes	,, 32-B.*
,,	35	Liquid metal polish	,, 35-A.*
,,	36	Lead yarn for caulking	,, 36
,,	37	Buckets, iron, galvanized	,, 37-B.*
,,	38	Fire bricks	,, 38-A.‡
,,	39	Fire clay	,, 39†
,,	40	Candles, wax, long	,, 40†
,,	41	Candles, wax, carriage	,, 41†
,,	48	Roofing felt	,, 48†
		OILS, PAINTS AND PAINTER'S MATERIALS.	
G/O.P.	1	Caster seed	G/O.P. 1
,,	3	Shellac	,, 3-B.
,,	4	Spirits, denatured methylated	,, 4-A.
,,	13	Oil, air-craft, medium	,, 13
,,	14	Oil, air-craft, heavy	,, 14
,,	20	Oil, lubricating, axle for use during hot weather	,, 20-A.
,,	21	Oil, lubricating, axle for use during cold weather	,, 21-A.
,,	33	Creosote	,, 33-B.*
,,	38	Petrol aviation	,, 38
,,	60	Soap, hard	,, 60-B.

Basic No.		Description.	Current edition.
		Oils, Paints and Painter's Materials—*contd.*	
G/O.P.	61	.. Soap, soft	G/O.P. 61-B.
"	64	.. Tar coal for road making..	" 64
"	65	.. Crude tar	" 65
"	66	.. Pitch coal tar, medium	" 66
"	67	.. Wood tar	" 67-A.
"	68	.. Oxidized (blown) petroleum bitumen ..	" 68
"	69	.. Steam refined petroleum bitumen	" 69
"	95 to 150.	Paints and painter's materials	" 95 to 150
"	157	.. Goldsize	" 157-A.
"	158	.. Gold leaf	" 158†
		Oils and Lubricants.	
"	301	.. Oil, spindle, extra light	" 301*
"	302	.. Oil, spindle, light	" 302*
"	303	.. Oil, spindle, for electric dynamos	" 303*
"	304	.. Oil, machinery, light	" 304*
"	305	.. Oil, machinery, medium for ordinary machinery	" 305*
"	306	.. Oil, engine, light	" 306*
"	307	.. Oil, engine, medium	" 307*
"	308	.. Oil, engine, heavy	" 308*
"	311	.. Oil, internal-combustion, engine, light ..	" 311*
"	312	.. Oil, internal-combustion, engine, medium ..	" 312*
"	313	.. Oil, internal-combustion, engine, heavy ..	" 313*
"	314	.. Oil, internal-combustion, engine, extra heavy	" 314*
"	321	.. Oil, turbine, light	" 321*
"	322	.. Oil, crank-chamber	" 322*
"	323	.. Oil, crank-chamber, heavy	" 323*
"	324	.. Oil, compressor, compounded	" 324*
"	331	.. Oil, cylinder, pure mineral, ordinary ..	" 331*
"	332	.. Oil, cylinder, compounded, ordinary ..	" 332*
"	333	.. Oil, cylinder, pure mineral, superheat ..	" 333*
"	334	.. Oil, cylinder, compounded, superheat ..	" 334*
"	335	.. Oil, cylinder, filtered, pure mineral ..	" 335*
"	336	.. Oil, cylinder, filtered, compounded ..	" 336*
"	341	.. Oil, non-freezing, extra light	" 341*
"	342	.. Oil, non-freezing, for use with refrigerators ..	" 342*
"	343	.. Oil, lubricating, common dark	" 343*

Basic No.		Description.	Current edition.	
		OILS AND LUBRICANTS—*contd.*		
G/O.P.	344	Oil, lubricating, axle	G/O.P.	344*
,,	345	Oil, gear, extra heavy	,,	345*
,,	351	Petrol	,,	351*
,,	352	Kerosene, first quality for wick lamps	,,	352*
,,	353	Kerosene, second quality	,,	353*
,,	354	Kerosene, third quality	,,	354*
,,	355	Oil, fuel, first quality	,,	355*
,,	356	Oil, fuel, second quality	,,	356*
,,	357	Oil, mineral, colza	,,	357*
,,	361	Oil, transformer and switch	,,	361*
,,	362	Oil, sealing	,,	362*
,,	371	Oil, castor	,,	371*
,,	372	Oil, cocoanut	,,	372*
,,	373	Oil, mustard (rape)	,,	373*
,,	374	Oil, Olive	,,	374*
,,	375	Oil, neat's foot	,,	375*
,,	376	Oil, whale	,,	376*
,,	377	Tallow	,,	377*
,,	381	Grease, cup	,,	381*
,,	382	Grease, graphite	,,	382*
,,	383	Mineral jelly	,,	383*
,,	395	Temporary rust preventive	,,	395†
		TIMBERS, G.		
G/Timbers	30	Deodar sleepers	G/Timbers	30-A.
,,	34	Teak squares	,,	34-A.
,,	35	Teak scantlings	,,	35
,,	36	Chir or dhup squares (pinus longifolia)	,,	36-A.*
,,	37	Toon squares or scantlings (cedrela toon)	,,	37
		HARDWARE, COPPER, TIN AND ZINC WARE, G.		
G/Ware	30	Wire, ordinary steel, black and galvanized	G/Ware	30-B.
,,	31	Iron and steel hoops	,,	31-A.
,,	32	Barbed wire	,,	32-C.
,,	33	Wire, ordinary steel, round either black or galvanised for making mattress cases for boulder, filling for flood protection or similar work	,,	33-A.

Basic No.	Description.	Current edition.
	HARDWARE, COPPER, TIN AND ZINC WARE, G.—*contd.*	
G/Ware 35	.. Brass wire gauge, mosquito proof	G/Ware 35-A.
„ 36	.. Wire galvanized strand fencing (3 ply and 7 ply)	„ 36-A.‡
	WATERWORKS STORES, G/W.W.	
G/W.W. 27	.. Salt glazed earthenware pipes	G/W.W. 27-B.
„ 34	.. Mild steel, pipes and specials for water main and hydraulic power	„ 34.
„ 35	.. Sluice valves	„ 35-A.*
„ 43	.. Lead pipes for water	„ 43-B.
„ 44	.. W. I. or M. S. pipes and fittings for gas water and steam	„ 44-A.*
	ELECTRICAL PLANT AND MATERIALS, H.	
H-23 ..	.. Wall plugs and sockets, two-pin, hand shield side entry and face entry pattern ..	H-23.
H-24 ..	.. Wall plugs and sockets, three-pin hand shield side entry and face entry pattern (two-pin and earth type)	H-24.
H-25 ..	.. Plugs and sockets, reversible and non-reversible protected type, two-pin for circuits up to 250 volts between poles with earthing connection	H-25.
H-26 ..	.. Switches, tumbler, quick make and quick break (for use on circuits up to 250 volts)	H-26.
H-27 ..	.. Cable, electric, dry core, paper insulated, telegraph, multiple, twin telephone and composite	H-27.†
H-28 ..	.. Cable, electric, dry core, paper insulated telephone	H-28.†
H-29 ..	.. Jointing sleeves, copper and bronze, for telegraph and telephone purposes	H-29.†
H-34 ..	.. Insulators porcelain, pin or shackle type for low and medium tension electric transmission line	H-34.
H-42 ..	.. Condensers, metal cased, 1st grade for telegraphs and telephones	H-42.
H-45 ..	.. Poles, steel, tubular type, for electric power transmission	H-45.
H-46 ..	.. Electrical flexible cords, single conductors, etc.	H-46-B.*
H-48 ..	.. Fans, ceiling, alternating current with regulators	H-48-D.*
H-50 ..	.. Bridge meggor testing set	H-50.

Basic No.	Description.	Current edition.
	ELECTRICAL PLANT AND MATERIALS, H.—*contd.*	
H-51	Control panel direct current motor iron clad	H-51-A.
H-53	Lamp, carbon filament, electric	H-53.
H-55	Fans, ceiling and regulators (D. C.) ..	H-55-D.*
H-56	Wire, copper, hard drawn bare	H-56-C.*
H-57	Cable, electric, single, V. I. R.	H-57-A.
H-58	Wood casing and capping	H-58-A.
H-60	Wire, copper hard, drawn, for telegraph or telephone	H-60-A.*
H-62	Cables, electric, medium and low pressure paper insulated lead covered and steel tape armoured, three core and two core ..	H-62-A.
H-64	Fans, electric, desk or pedestal, D. C. ..	H-64-A.*
H-65	Fans, electric, desk or pedestal, A. C. ..	H-65-A.*
H-67	Single core, V. I. R. flame proof cable, and fire resisting cable (250 volts, 600 megohm grade)	H-67-A.
H-68	Two and four core twin and quad twisted rubber insulated lead covered and armoured under water telegraph cable	H-68-B.
H-69	Single core V. I. R. tropical grade insulated cable (250 volts, 600 megohm grade) ..	H-69.
H-70	Cords instrument (tropical finish)	H-70.
H-71	Wire, copper, silk covered	H-71-A.*
H-72	Wire, copper, cotton covered	H-72-A.*
H-73	Four core, rubber insulated, lead covered and under water telegraph cable	H-73.†
H-74	Zincs, circular, special design, moulded for Leclanche cells	H-74.
H-75	Cells, Leclanche, sack type	H-75.
H-76	Insulators porcelain, screwed pattern ..	H-76-A.*
H-77	Multicore telephone switchboard cable (tropical pattern with enamelled conductors) ..	H-77.†
H-78	Lamps, tungsten filament, electric ..	H-78.
H-79	Cell, Leclanche, sack type sizes 1 and 2 ..	H-79-A.‡
H-80	Wire, steel, 7 strand, 450 lbs. per mile ..	H-80.†
H-81	Internal wiring of buildings	H-81.†
H-82	Wood casing and capping type for internal wiring of buildings	H-82.†
H-83	Galvanized iron wires for telegraphs, telephones and cables	H-83.†
H-87	Alkaline cells or batteries	H-87.†

Basic No.	Description.	Current edition.
	POWER AND INDUSTRIAL PLANT.	
P.I. 19	.. Dragline excavator, light weight, oil engine operated	P.I. 19-B.
„ 20	.. Dragline excavator, light weight, steam operated, coal firing	„ 20-A.
„ 26	.. Jolly boat	„ 26.
„ 35	.. Dragline excavator, light weight, steam operated, coal or oil firing	„ 35-B.
„ 36	.. Electric hoists or winches	„ 36.
„ 37	.. Dredgers (grab type)	„ 37.
„ 38	.. Petrol paraffin engine	„ 38-C.*
„ 39	.. Belting for power drive	„ 39-A.
„ 40	.. Motor boat	„ 40-A.
„ 42	.. Steam pile driving plant	„ 42.
„ 43	.. Crude oil engine	„ 43-H.
„ 45	.. Dragline excavator, medium weight, steam operated, coal or oil firing	„ 45-B.
„ 60	.. Centrifugal pumps	„ 60.
„ 61	.. Stone breaker, etc., oil engine driven ..	„ 61.
„ 62	.. Mortor grinding, mill	„ 62.
„ 65	.. Dragline excavator, special light weight, steam operated, coal or oil firing	„ 65-B.
„ 74	.. D. C. generators and motors	„ 74-A.*
„ 76	.. Electric power transformers	„ 76.
„ 77	.. Alternators	„ 77-B.
„ 81	.. D. C. switchboard	„ 81-B.
„ 82	.. D. C. generator, 3 wire type and static balancers	„ 82.
„ 95	.. Eelctrically operated, overhead, travelling and traversing crane	„ 95.
„ 106	.. Road roller steam operated, coal or wood fired	„ 106-F.*
„ 114	.. Supply of plant and machinery and their erection at site	„ 114-B.*
	TEXTILES.	
G/Tex./C-1	.. Cotton twine 5/10s.	G/Tex./C-1
„ 4	.. Cotton canvas, brown	„ 4.
„ 6	.. Boy messenger's bag	„ 6.
„ 7	.. Sheets, ground	„ 7.
„ 8	.. Paulins, cotton	„ 8.

TEXTILES—*contd.*

Basic No.		Description.	Current edition.
G/Tex./C. 9	..	Durries, blue striped	G/Tex./C 9.
,, 10	..	Bags, kit	,, 10-A.*
,, 11	..	Bags, ration, waterproof	,, 11-A.*
,, 12	..	Haversack	,, 12-B.
,, 13	..	Capes waterproof, Indian with hood ..	,, 13.
,, 14	..	Capes waterproof, Burma	,, 14-A.*
,, 15	..	Newar, grey	,, 15-A.
,, 16	..	Putties, cotton of all shades	,, 16-C.*
,, 24	..	Cotton, yarn, grey	,, 24-C.
,, 28	..	Dusters, cotton, hemmed and unhemmed ..	,, 28-B.*
,, 30	..	Sheeting, unbleached	,, 30-B.
,, 31	..	Haversack, khaki, cotton drill with side gussets	,, 31-B.
,, 33	..	Thread, cotton sewing of various sizes and colour	,, 33-C.
,, 34	..	Muslin (bleached)	,, 34.
,, 36	..	Bandage cloth (bleached)	,, 36-D.
,, 37	..	Black alpaca cloth	,, 37-A.
,, 39	..	Black paramatta cloth	,, 39-B.*
,, 40	..	Twill, khaki	,, 40-C.*
,, 42	..	Jean cotton, bleached	,, 42.
,, 43	..	Lining cloths, cotton, satin	,, 43-D.*
,, 44	..	Pugri cloths, cotton khaki	,, 44-B.
,, 45	..	Canvas, cotton, khaki, proofed for hoods ..	,, 45-D.
,, 46	..	Durries, ordinary quality	,, 46.
,, 48	..	Jaconet cloth, grey	,, 48.
,, 49	..	Waste cotton, white for axle box packing ..	,, 49-C.
,, 50	..	Waste cotton, white No. 1-B.	,, 50.
,, 51	..	Waste cotton, coloured for cleaning machinery	,, 51-A.
,, 52	..	Waste cotton, white or coloured for cleaning ordinary machinery	,, 52.
,, 53	..	Drill cotton, dyed, heavy medium or light qualities	,, 53-D.*
,, 54	..	Bleached drill, heavy, medium and light qualities	,, 54-D.*
,, 55	..	Khaki drill, heavy medium and light qualities	,, 55-C.*
,, 56	..	Pugri cloth, cotton, red	,, 56-B.
,, 57	..	Pugri cloth, cotton, blue	,, 57-C.

Basic No.	Description.	Current edition.
	TEXTILES—*contd.*	
G/Tex./C. 58	Pugri cloth, cotton, bleached	G/Tex/C. 58-A.
„ 62	Pugri cloth, cotton, green	„ 62-A.
„ 63	Webbing cotton, khaki	„ 63.
„ 64	Kullahs	„ 64.
„ 65	Dosuti bleached	„ 65-A.
„ 67	Long cloth, bleached	„ 67.
„ 68	Cloth table, bleached, cotton	„ 68-B.*
„ 69	Sheeting, unbleached	„ 69-A.*
„ 70	Sheets, bed, unbleached	„ 70-B.*
„ 71	Lungies with headings of gold thread	„ 71.
„ 73	Lungies, ordinary	„ 73-B.*
„ 75	Napkins, cotton, table, bleached	„ 75-A.*
„ 78	Gabardine cotton cloth, blue black shade	„ 78-A.
„ 81	Pliable sheets of cotton canvas	„ 81.
„ 83	Drill, cotton, grey	„ 83-A.
„ 85	Towels, hand	„ 85-B.*
„ 87	Towels, bath, turkish	„ 87-A.*
„ 88	Tape, cotton white, unbleached	„ 88.
„ 89	Umbrellas	„ 89.
„ 91	Capes with hood, waterproof	„ 91-A.
„ 92	Canvas cotton, green, proofed	„ 92-A.*
„ 93	Webbing, white and coloured	„ 93-A.
„ 94	Cloth ticking, grey	„ 94-A.*
„ 96	Coats waterproof	„ 96-A.*
„ 98	Sheets, bed, bleached	„ 98.
„ 99	Bags for carrying air mails	„ 99.
„ 101	Jerseys, cotton, grey	„ 101-C.*
„ 102	Cloth, Bedford cord, khaki	„ 102.
„ 104	Durries, flooring	„ 104.
„ 105	Bleached muslin, white (cambric)	„ 105.
„ 108	Curtains, mosquito	„ 108.
„ 109	Stocking, cotton dyed	„ 109.
„ 110	Kharooa cloth	„ 110.
„ 112	Cotton canvas, Khaki waterproofed for hoods (1st quality).	„ 112.
„ 124	Waste cotton, white, superior, for axle box packing	„ 124-A.

Basic No.	Description.	Current edition.
	TEXTILES—*contd.*	
G/Tex./C. 125	.. Waterproof cape (ground sheet) with detachable hood	G/Tex./C. 125-A.‡
,, 127	.. Wick, cotton, castor oil	,, 127-A.‡
,, 129	.. Sponge cloth	,, 129.†
,, 130	.. Twill cotton striped (bleached)	,, 130.†
,, 131	.. Cloth cotton waterproof khaki double fabric interlined with rubber..	,, 131.†
,, 132	.. Coir yarn, 2 ply	,, 132.†
,, 139	.. Netting cotton, mosquito and sand fly ..	,, 139-A.‡
,, 140	.. Cloth, cotton, plain grey	,, 140-A.‡
,, 142	.. Gauze absorbent bleached	,, 142.†
,, 143	.. Gauze absorbent, bleached, for first field dressing	,, 143.†
,, 144	.. Fringes, cotton, dyed	,, 144.†
G/Tex./F. 1	.. Superintendent's camp bag, flax canvas, single	G/Tex./F.- 1
,, 2	.. Superintendent's camp bag, flax canvas, double	,, 2
,, 4	.. Bags, nose	,, 4-B.
,, 5	.. Buckets canvas for ponies	,, 5.
,, 6	.. Planter's bag with locking arrangements (unproofed) and planter's bag (proofed) and with locking arrangements	,, 6-B.
,, 7	.. Canvas flax	,, 7-A.*
,, 8	.. Threads and twines, sewing, linen for upholstery work	,, 8-B.*
,, 34	.. Canvas, French	,, 34-A.
,, 36	.. Canvas flax 'C' grade	,, 36.
,, 37	.. Canvas, white, unproofed, flax, hemp or all hemp for carriage cushions and seats ..	,, 37-A.*
,, 38	.. Canvas, staying	,, 38.
,, 45	.. Dowlas 54″ wide	,, 45.
,, 46	.. Paulins	,, 46-E.*
G/Tex./H. 1	.. Head and heel ropes, manilla	G/Tex/H. 1-A.
,, 2	.. Cordages and Line, hemp	,, 2.
,, 3	.. Hemp twine, English and Country ..	,, 3.
,, 6	.. Cash bags, tat puttie	,, 6.
,, 7	.. Rope, manilla, special and ordinary ..	,, 7.†
G/Tex./J. 1	.. Jute twine, 1 ply, 2 ply, 3 ply, 4 ply, 5 ply and 6 ply	G/Tex./J. 1-A.

Basic No.	Description.	Current edition.
	TEXTILES—*contd.*	
G/Tex./J. 12	Jute bags unproofed for lineman's tools	G/Tex./J. 12-B.
„ 22	Flax or jute mail bags proofed and unproofed	„ 22-B.
„ 23	Jute paulins	„ 23-B.
„ 37	Jute bags, " B Twill ", 44″ × 26-1/2″	„ 37.†
G/Tex./Misc. 7	Lace gold	G/Tex./Misc.7.
„ 25	Braid, lace and fringes, gold	„ 25.
„ 27	Cloth, leather, imitation	„ 27-A.‡
„ 29	Coir fibre	„ 29.†
„ 30	Carpets, Aixminister	„ 30.†
„ 41	Matting, coir	„ 41.†
„ 43	Garments, rubber, waterproof	„ 43.†
G/Tex./T. 1	General specification for tent components	G/Tex./T. 1.
„ 2	Swiss cottage tent, square ended	„ 2.
„ 3	Hill tent	„ 3.
„ 4	Tehsildar's tent	„ 4.
„ 5	Raoti tent, single fly	„ 5.
„ 20	Tent, necessary	„ 20-A.
„ 21	Miniature swiss cottage tent (round ended)	„ 21.
„ 22	Indian officer's tent (double fly)	„ 22.
„ 23	Kashmir tent, round ended	„ 23.
„ 24	Tents square ended, forest officer pattern	„ 24.
„ 40	Servant's pals or shouldaries	„ 40.
„ 41	Light field service tents, 80 lbs.	„ 41.
„ 42	Field officer's kabul pals	„ 42-A.*
„ 43	General service tents	„ 43-A.
„ 44	Sowar pal	„ 44.
„ 45	Survey pal, square ended	„ 45-A.*
„ 46	Half pal tents	„ 46-B.*
„ 47	Mountain battery tents	„ 47.
„ 48	Sleeping pal	„ 48.
„ 49	Hudson Raoti tent	„ 49.†
„ 50	Shooting pal (or double fly sleeping pal) with bathroom	„ 50.†
G/Tex./W. 1	Wool, black and mixed for blankets	G/Tex./W. 1.
„ 3	Drawers, woollen	„ 3-A.*
„ 4	Balaclava cap	„ 4-A.*
„ 5	Jackets, cardigan, woollen	„ 5-C.*

Basic No.		Description.	Current edition.
		TEXTILES—*concld.*	
G/Tex./W. 6	..	Putties, woollen, khaki or blue	G/Tex./W. 6-C.*
,, 7	..	Bunting cloth, white and coloured ..	,, 7-C.*
,, 8	..	Serge blue, medium quality and broad cloth..	,, 8-B.*
,, 9	..	Serges of superior quality	,, 9-B.
,, 11	..	Flannel, silver grey	,, 11-A.*
,, 12	..	Mittens	,, 12-B.*
,, 13	..	Packing, woollen, yarn for main motor and suspension bearings	,, 13.
,, 16	..	Flannel, white	,, 16-B.
,, 18	..	Serge, blue for shore and sea service ..	,, 18.
,, 19	..	Serge, khaki	,, 19.
,, 20	..	Socks, woollen, blue grey	,, 20-B.*
,, 21	..	Woollen yarns	,, 21-C.
,, 22	..	Serges of medium quality..	,, 22-A.
,, 23	..	Broad cloth, woollen	,, 23-B.*
,, 24	..	Flannel, green, superior quality	,, 24.
,, 25	..	Serges of various shades for lining	,, 25.
,, 26		Flannel Angola (union) grey	,, 26.
,, 27	..	Irish Frieze for great coats	,, 27-A.*
,, 29	..	Blankets, saddle	,, 29.
,, 30	..	Blankets, woollen, scarlet, grades 1 and 2 ..	,, 30-B.*
,, 31	..	Blankets, woollen, ordinary	,, 31-B.*
,, 32	..	Blanket cloth for clothing staff of railways and civil departments.	,, 32-C.*
,, 34	..	Yarn similar to Illingsworths Thrums for packing bearing boxes of axle generators on electric freight locomotives	,, 34.
,, 36	..	Jerseys, woollen..	,, 36-C.*
,, 52	..	Felt	,, 52-A.*
,, 53	..	Numdah, felt for saddles	,, 53.
,, 55	..	Bannians, flannel, blue grey	,, 55.
,, 56	..	Trimming, worsted, grey for use on all oil cups on locomotives	,, 56-B.

* Specifications revised during the year 1931-32.

† Specifications framed during the year 1931-32.

‡ Specifications framed and revised during the year 1931-32.

List of Indian Stores Department Special Specifications current at the end of the year 1931-32.

Specification No.	Description.
	Bridgework.
A-31	Standard, mobilization, steel hutting (M. W. services).
A-32	Steel and ironwork required by the Indian Public Works Department, Delhi, for the roofing of the Assembly, the Council of State and the Council of Princes' Chambers and Library of the New Legislative Buildings, Imperial Delhi.
A-36	Special construction quarters (portable hutting), for the Lloyd Barrage Project.
	Engineer's Plant.
B-48	Portable steam pumping engine equipment with vertical boiler and hose pipe for the Bikaner Canal, Punjab.
B-49	Crane, one 7-ton, Scotch hand derric for the Irrigation Department, Punjab.
	Ballast and permanent way.
D-3*	Light railway track, turntables and trucks, for military purposes.
	Rolling Stock.
E-30	Metre gauge steam rail motor with goods truck and goods trailer truck for the Sutlej Valley Project, Punjab, Public Works Department.
E-31	Steam locomotives, 2′—0″ gauge, for the Sutlej Valley Project Bikaner Canal, Punjab Public Works Department.
E-40	Steam locomotives, 2′—0″ gauge, for the Sukkur Barrage Project.
E-52	Rectangular steel bearing plates for N. W. Railway.
	Lamps and lamp fittings.
G/Lamps 11 ..	R. M. S. folding candle lantern for the Posts and Telegraphs Department.

Specification No.		Description.
		Lamps and lamp fittings—contd.
G. Lamps	16 ..	Brass sealing lamp for the Posts and Telegraphs Department.
,,	23 ..	Table lamps, hanging lamp and hurricane lantern for Director-General, Posts and Telegraphs Department.
,,	24 ..	Incandescent hurricane or hanging lantern petrol pressure type, for the Posts and Telegraphs Department.
		Leathers.
G/Leather	44 ..	Waist, belt, leather for P. W. D., Punjab.
,,	49 ..	R. M. S. portfolio (G. pattern).
,,	50 ..	Portfolio with lock supervising officer (for P. and T. Department).
,,	51 ..	R. M. S. leather portfolio fitted with compartments for stamps, seals, etc.
,,	52 ..	Leather belts for G. I. P. Railway.
,,	53* ..	Derby shoes black or brown for E. I. Railway (Crew staff).
,,	56-A†	Boots ammunition, for police constables.
,,	57* ..	Leather goods for police department.
		Metals.
G/Metals	47 ..	Anti-friction metal high grade and low grade for the Military Engineer Services.
,,	72 ..	M. S. sheets for the Telegraph Department.
		Miscellaneous.
G/Misc.	3-A‡..	Kit boxes for sea service for M. E. S.
,,	4-A ..	Double security bond boxes and stamp boxes for the Posts and Telegraphs Department.
,,	5 ..	Despatch boxes for the Postmaster General, Bombay.
,,	6-A ..	Safes for the Director-General, Posts and Telegraphs Department.
,,	7-A ..	Tin box for insurance seal types and Tin box for stamp types for R. M. S.
,,	8 ..	Lead seals for the Posts and Telegraphs Department.
,,	9-A ..	Clocks and time pieces for the Posts and Telegraphs Department.

Specification No.		Description.
		Miscellaneous—contd.
G. Misc.	10 ..	Tin trays to hold Rs. 1,000 and Rs. 500 for the Posts and Telegraphs Department.
"	11-A‡	Badges grass for the Posts and Telegraphs Department.
"	12 ..	Letter box for the Posts and Telegraphs Department.
"	13 ..	Punching machine for the Posts and Telegraphs Department.
"	14 ..	Spear head with brass bells for the Posts and Telegraphs Department.
"	16 ..	Tin sheets for the Posts and Telegraphs Department.
"	20 ..	Wooden block for label for the Posts and Telegraphs Department.
"	21-A..	Enamelled sheet, steel signboards, letter box plates, etc., for the Posts and Telegraphs Department.
"	22-A..	Button brass for the Posts and Telegraphs Department.
"	23 ..	Tin seal holder for the Posts and Telegraphs Department.
"	26-B..	Crumps adjustable, proportional modules for the Irrigation Department, Punjab.
"	33 ..	Lead seals for the Controller of the Currency.
"	45* ..	Brass padlocks, box locks, drawer or almirah locks for iron safes and special locks for the Posts and Telegraphs Department.
"	46* ..	Scales and weights for the Posts and Telegraphs Department.
"	47* ..	Fireclay for the N. W. Railway.
"	49* ..	Hoses, flax, canvas, for Railways.
		Oils, Paints and Painter's Stores Materials.
G/O. P.	43 ..	Oils for use of Government Telegraph Department.
"	152 ..	Oil, lubricating crank chamber, high speed steam engine No. 2, for Bengal Nagpur Railway.
"	153 ..	Oil, gas making.
"	396* ..	Green paint, special, readymixed to E. B. Railway shade.
		Water Works Stores.
G/W. W.	31 ..	Wrought iron or mild pipes for water for the Bikaner Canal.
"	51-A..	89,000 cft. of rising main, specials, sluice valves, air valves, etc., from Ramgarh to Jaipur for the Water supply scheme for the Jaipur State P. W. D.
"	52 ..	Distribution piping, specials, valves and accessories for the water supply scheme for Jaipur State P. W. D.
"	53 ..	Piping specials, valves and accessories for water supply, P. W. D., New Delhi.

Specification No.	Description.
	Electrical Plant and Materials.
H-59 ..	.. One switchboard generator panel for Ambala.
H-61-A ..	.. Low and medium pressure paper insulated lead covered and steel tape armoured, 3 core and 2 core electric cables for the Indian Public Works Department, Delhi.
H-63 ..	.. Motor alternator set and testing transformer with induction regulator and controller for the Government Test House, Calcutta.
H-66-B‡	.. Composition Insulators for the Posts and Telegraphs Department.
H-88* ..	.. Belting for train lighting dynamos for Indian Railways.
H-89* ..	.. Broad and metre gauge carriage fans for Indian State Railways.
	Power and Industrial Plant.
P. I. 27	.. Heave up boat for the Lloyd Barrage Works, Sukkur.
„ 28	.. Heave up boat for the Lloyd Barrage Works, Sukkur.
„ 41	.. Pile driver and frame for the Sutlej Valley Project.
„ 46	.. Steam and exhaust piping for the Nalagarh Power House.
„ 47	.. Two 25 K. W. oil engine driven generating sets and switchboard for the British Infantry Barracks, Lahore.
„ 48	.. Turbo-alternator set, condensing plant, cranes, boiler economiser pumps, steel chimney, steam and exhaust pipe work, switchboard motor converter set, rotary converters, sub-station plant, extra high tension feeder cables, and auxiliaries for the Public Works Department, Delhi.
„ 50	.. Concrete mixers and prime movers required for the Bikaner Canal, Sutlej Valley Project.
„ 51	.. Stone breaker plant and screens for the Nalagarh Quarries, Sutlej Valley Irrigation Project.
„ 52	.. Generating plant, transformers, switchgear, pump and motors, for the Nalagarh Quarries Power Plant, Punjab Irrigation Department.
„ 53	.. Generating plant, transformers, switchgear, pump and motors, for the Ferozepore Division Power Plant, Punjab, Irrigation Department.
„ 54	.. Concrete mixers with motors for the Sutlej Valley Projects.
„ 55	.. One 53·4 K. V. A. oil engine driven A. C. generating set with exciter for the Northern India Salt Revenue Department, Sambhar Lake.
„ 56	.. Switchgear for the Northern India Salt Revenue Department, Sambhar Lake.
„ 57	.. A. C. motor and control gear for the Government of India Press, Simla.
„ 58	.. A. C. motors, control gear, main switchpanel, cable work and wiring for the experimental spinning plant and Technological laboratory of the Indian Central Cotton Committee, Bombay.

Specification No.	Description.
	Power and Industrial Plant—contd.
P. I. 59	.. Two 4 K. W. oil engine-driven generating sets and switchboards for the Military Works Services, Nowshera Sub-District, Northern Command.
" 63	.. Passenger, goods and service lifts, required by the Indian Public Works Department, for the New Legislative Buildings, Delhi.
" 64	.. Passenger, goods and service lifts, required by the Indian Public Works Department, for Government House, Delhi.
" 66	.. Oil engine alternator set, water cooling plant, crane, switchgear and cables for power station ; transformer switchgear and cables for a sub-station for the Lloyd Barrage Works, Sukkur.
" 70	.. Oil engine dynamo set, main fuel tank complete with pipework-water cooling plant, crane, switchgear and cables for power station and motors, control gears and cables for the press machinery for the Government Postal Press, Aligarh.
" 78	.. Additional oil engine alternator sets, water cooling plants, transformers, switchgear and cables for the Power Station of the Lloyd Barrage Works, Sukkur.
" 79	.. Concrete blockyard plant for the Lloyd Barrage Project, Sukkur.
" 83	.. 325 K. W. oil engine alternator sets, water cooling plant, oil fuel storage tank complete with pipework, crane, transformers, switchgear, and connecting cables, induction motors, E. H. T. feeder cables and accessories for Power Station and Miscellaneous plant, for Salt Mines, Khewra.
" 84	.. Goods lifts for Postal Press, Aligarh.
" 85	.. Electrically driven pumping machinery mounted on pontoons for dewatering coffer dams for the Lloyd Barrage Works, Sukkur.
" 86	.. Oil engine driven power plant for the New Power Station, Municipal Board, Mussooree.
" 87	.. Plant for Hydro-electric scheme, Municipal Board, Mussooree.
" 88	.. Oil engine driven power station for Jaipur.
" 89	.. Pile driving plant mounted on pontoons for the Lloyd Barrage Works, Sukkur.
" 90	.. Scotch derrick crane, motor driven, to lift 25 and 10 tons, on pontoons for the Lloyd Barrage Works, Sukkur.
" 91	.. Steam driven paddle tugs for the Lloyd Barrage Works, Sukkur.
" 92	.. Barges for the Lloyd Barrage Works, Sukkur.
" 93	.. Oil engine driven (diesel) Bucyrus dragline excavators, 30B, for the Lloyd Barrage Works, Sukkur.
" 94	.. Oil engine driven (diesel) Bucyrus dragline excavators, 50B, for the Lloyd Barrage Works, Sukkur.
" 96	.. Electrical plant for the Public Works Department, Punjab.
" 97	.. 30-B diesel engine driven Bucyrus dragline excavator for the Lloyd Barrage Works, Sukkur.
" 99	.. Steel barges of capacity up to 100 tons of stone for the Lloyd Barrage Works, Sukkur.
" 100	.. 50-B diesel engine driven Bucyrus dragline excavator for the Lloyd Barrage Works, Sukkur.

Specification No.	Descript on.
	Power and Industrial Plant—concld.
P. I. 101 ..	Sluice gates for the Panjnad Barrage on the river Sutlej, thirty-three gates, clear width of opening 60′—0″, 18′—6″ deep for the Punjab Public Works Department.
„ 102 ..	Gates for the under-sluices for the Weir across the river Damodar.
„ 103 ..	250 K. W. 2,300 volts full diesel oil engine alternator sets for the Public Works Department, Simla.
„ 104 ..	One 600 K. W. 3,300 volts, oil engine alternator set, oil fuel service tanks, etc., for additional power station, Jaipur Public Works Department.
„ 105 ..	Steel barges of capacity up to 100 tons of stone for Lloyd Barrage Works, Sukkur.
„ 107 ..	Three 200 K. W. 400 volts water turbine alternator sets, etc., for the Sumera Hydro-Electric Pumping and Power Scheme for the P. W. D., United Provinces.
„ 108 ..	Radial gates for the head and cross regulators for main canal and branches of the Lloyd Barrage and Canal Construction, Sind.
„ 109 ..	Sluice gates vertical sliding and radical types for small branches, distributions and minors of the Lloyd Barrage and Canal Construction, Sind.
„ 115 ..	Sea going steam lighter for Forest Department, Port Blair.
	Cloth, Clothing and Equipment.
G/Tex/C. 17-B‡ ..	Capes with hoods, waterproof for the Postal Department.
„ 18 ..	Cotton wool for bandages for the Medical Department.
„ 19-A‡ ..	Long cloth bleached for the Medical Department.
„ 21-D‡ ..	Bags, dosooti, postal, for the Indian Postal Department.
„ 25 ..	File bundling sheet of blue drill for the Posts and Telegraphs Department.
„ 26 ..	Khaki drill sacks postman's for the Posts and Telegraphs Department.
„ 27-A ..	Waterproof khaki drill delivery bag for the Posts and Telegraphs Department.
„ 29 ..	Clothing materials for the use of the Staff of the Posts and Telegraphs Department.
„ 32 ..	Capes with hoods, waterproof for Bombay Police.
„ 38-A ..	Haversack for Burma Military Police.
„ 66A‡ ..	Pugri muslin, blue, for North Western Railway.
„ 72 ..	Dosooti grey for Borstal Institute, Lahore.
„ 74 ..	Turbans, khaki, for G. I. P. Railway staff.
„ 76 ..	Dosooti, khaki, for N. W. Railway.
„ 77 ..	Dosooti, grey, for E. I. Railway.

Specification No.	Description.
	Cloth, Clothing and Equipment—contd.
G/Tex/C. 79-B ..	Lungis, ordinary, for Sind Police.
" 84 ..	Grey drill, unbleached, for Borstal Institute, Lahore.
" 86 ..	Sheeting, grey, for Borstal Institute, Lahore.
" 97 ..	Dosooti, grey, (heavy quality) for Railways.
" 103-B ..	Sheets, bed, bleached, for Indian State Railways.
" 107 ..	Flashes and belts for E. I. Railway.
" 111-A‡ ..	Canvas, white (for N. W. R.), for seats.
" 113 ..	Shorts and blouses, khaki, for G. I. P. Railway.
" 114-A ..	Wicks, cotton, for State Railways.
" 115 ..	Red flags with letter P. W. D. for roads under repair.
" 116-A ..	Badge cloth, embroidered, C. and W., for N. W. Railway.
" 117 ..	Ground sheets, waterproofed, for prisons, Burma, Bihar and Patna.
" 118 ..	Long cloth, bleached, for the Government Printing and Stationery Department, Burma.
" 119 ..	Cloth, Holland, for N. W. Railway.
" 120 ..	Canvas cotton, black for N. W. Railway.
" 121 ..	Bags, waterproof for clearance of outside letter boxes.
" 122 ..	Long cloth, bleached for overalls for E. I. Railway.
" 123-A‡ ..	Duck, cotton for G. I. P. Railway.
" 126 ..	Bags, canvas, cotton, white, for Madras Police.
" 128* ..	Bags, dosooti cotton, for the Opium Factory, Ghazipur.
G/Tex/J. 33-A ..	Hand bags for R. M. S. sorters.
" 34 ..	Canvas, jute, unproofed, for Inspector-General of Police, Madras.
" 35 ..	Felt, tarred, jute, for N. W. Railway.
G/Tex/Misc. 1 ..	Waist and shoulder belts of red broad cloth for Postal Department.
" 2-H‡	Summer uniforms for the East Indian and Eastern Bengal Railway staff.
" 3-E‡	Winter uniforms for E. I. and E. B. Railway staff.
" 24 ..	Clothing materials for Government of India menial staff.
" 26* ..	Belt, lace for the N. W. Railway.
" 28-A†	Textile materials for the Government Printing and Stationery Department, Imperial and Provincial.
" 40 ..	Gold lace for the uniforms of Government of India menial staff.
" 42* ..	Mat, door pile, coir, for State Railways.
G/Tex/W. 10-A ..	Oxford grey for N. W. Railway.
" 14-A ..	Broad cloth, dark blue for Bombay Police.
" 15 ..	Serge white for Medical and Veterinary Department.
" 17 ..	Great-coats with capes for mounted and foot police, Sind.
" 28-B‡ ..	Blankets, woollen, for G. I. P. Railway menial staff.
" 38-A‡ ..	Great-coats with capes for Salt and Excise Department, Sind.
" 39 ..	Serge, khaki, for G. I. P. Railway.

Specification No.		Description.
		Cloth, Clothing and Equipment—concld.
G/Tex/C. 41	..	Serge, grey, for E. I. Railway.
„ 50	..	Drab mixture great-coat cloth for the Inspector-General of Prisons, Bombay.
„ 51	..	Twill cloth, woollen, khaki, for the Posts and Telegraphs Department.
„ 57	..	Great-coat, cloth, khaki, for the Assam Police, 1, 2 and 4 Assam Rifles.
„ 58*	..	Kambalies, woollen, for Bombay Forest Department.
„ 60*	..	Great-coats, foot and mounted types, for the Railway Police Rajputana.
„ 61*	..	Blue grey hosiery worsted yarn for the Jail Department, Burma.

* Specifications framed during the year 1931-32.

† Specifications framed and revised during the year 1931-32.

‡ Specifications revised during the year 1931-32.

APPENDIX XII.

Statement showing the work done by Inspection Branch.

Value and tonnage of stores inspected, number of tests and analyses carried out and the amount of fees earned.

(*Vide* paragraphs 44, 52, 57 of the Report.)

—	Value of stores inspected and charged on value.				Tonnage of stores inspected and charged on weight.				Number of tests and analyses carried out.				Fees earned.			
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.
	Rs.	Rs.	Rs.	Rs.	Tons.	Tons.	Tons.	Tons.					Rs.	Rs.	Rs.	Rs.
Calcutta Inspection Circle ..	2,71,43,731	4,33,15,920	3,74,98,794	3,05,42,816	39,714	44,148	40,340	1,11,595	..	..	..	..	2,99,332	5,09,606	4,39,189	4,50,544
Bombay Inspection Circle ..	1,21,60,466	1,31,96,023	1,12,34,426	66,90,637	591	80	200	2,496	..	..	..	..	1,22,537	1,32,190	1,12,901	72,445
Karachi Inspection Circle ..	72,93,678	90,06,402	79,39,758	42,63,092	2,210	4,600	274	2	..	..	..	..	75,693	99,264	79,946	42,634
Upper India Inspection Circle	57,90,331	71,14,958	51,09,146	37,85,681	..	..	..	..	..	..	..	..	57,903	71,150	52,092	37,990
Cawnpore Inspection Branch			24,57,120	20,76,382	..	..	..	..	..	..	..	..			24,616	20,764
Madras Inspection Branch ..	6,33,590	8,04,066	8,41,026	7,61,770	..	..	..	..	..	..	..	..	6,336	8,041	8,410	7,618
Total Provincial Inspectorates	5,30,21,796	7,34,37,369	6,50,80,270	4,81,20,378	42,515	48,828	40,814	1,14,093	..	..	..	..	5,61,801	8,20,251	7,17,154	6,31,995
Metallurgical Inspectorate ..	12,11,310	13,61,768	10,39,272	3,01,489	1,76,249	2,94,281	2,87,206	1,96,411	3,303	5,292	7,067	6,345	2,30,807	3,58,909	3,57,736	2,31,434
Government Test House, Alipore	..	..	..	..	..	..	..	..	9,133	8,428	8,628	7,892	1,96,936	2,05,376	1,80,605	1,78,836
Government Test House, Bombay	..	..	..	..	..	..	..	..	517	553	561	164	9,731	10,621	10,118	3,573
GRAND TOTAL ..	5,42,33,106	7,47,99,137	6,61,19,542	4,84,21,867	2,18,764	3,43,109	3,28,020	3,10,504	12,953	14,273	16,256	14,401	9,99,275	13,95,157	12,65,613	10,45,838
					Deduct tests carried out for the Indian Stores Department.				3,122	3,927	3,876	3,731	67,057	91,142	82,762	85,058
					Net Total ..				9,831	10,346	12,380	10,670	9,32,218	13,04,015	11,82,851	9,60,780

APPENDIX XIII.

Statement showing inspection work carried out for various authorities (material charged on value).

(*Vide* paragraph 44 of the Report.)

res were	Calcutta Inspection Circle.				Bombay Inspection Circle.			
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
.. ..	84,52,683	1,11,68,984	1,26,65,834	1,01,57,486	55,88,025	78,85,779	84,75,293	58,08,713
partments—								
epartments—	..	768	756	..	..	...	..	..
epartments—	..	..	..	..	..	..	..	..
.. ..	1,18,41,172	2,16,94,619	1,58,65,506	1,48,16,453	45,05,384	38,44,808	20,01,998	7,02,365
ed ..	60,86,441	1,00,72,775	84,48,302	50,56,467	20,33,228	13,84,347	6,68,094	1,43,450
an States ..	6,830	58,385	42,064	74,528	32,836	68,217	87,454	27,548
ations ..	1,79,34,443	3,18,25,779	2,43,55,872	1,99,47,448	65,71,448	52,97,372	27,57,546	8,73,363
.. ..	31	1,64,248	2,15,054	4,01,092	333	..	..	..
.. ..	1,240	1,45,369	1,91,866	27,764	..	10,542	..	..
an States ..	7,55,334	10,372	67,803	9,026	660	2,330	1,587	3,795
public bodies	..	400	1,609	..	..	..	..	4,766
epartments	1,86,91,048	3,21,46,936	2,48,32,960	2,03,85,330	65,72,441	53,10,244	27,59,133	8,81,924
TOTAL ..	2,71,43,731	4,33,15,920	3,74,98,794	3,05,42,816	1,21,60,466	1,31,96,023	1,12,34,426	66,90,637

res were	Karachi Inspection Circle.				Upper India Inspection Circle.				Cawnpore Inspection Branch.	
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1930-31.	1931-32.
	Rs.	Rs.	Rs.	Rs.	Rs. (a)	Rs. (a)	Rs.	Rs.	Rs.	Rs.
.. ..	44,75,338	56,35,886	65,47,995	41,16,830	57,52,906	70,82,063	50,66,224	37,41,132	24,23,192	19,97,914
partments—										
epartments—	..	..	..	..	..	..	..	..	..	..
epartments—	..	..	1,170	1,40,229	..	..	..	..	..	..
.. ..	28,09,797	33,54,290	13,77,254	535	37,425	12,155	10,922	405	24,895	75,508
ed ..	7,591	..	..	840	..	..	..	..	..	..
an States ..	952	16,226	10,035	102	..	..	..	..	..	..
ations ..	28,18,340	33,70,516	13,87,289	1,477	37,425	12,155	10,922	405	24,895	75,508
.. ..	..	..	..	..	..	..	32,000	44,144	..	..
.. ..	..	..	..	..	..	..	..	..	..	..
an States ..	..	..	3,304	4,556	..	..	..	..	..	..
public bodies	..	..	..	..	..	20,740	..	..	9,033	2,960
epartments	28,18,340	33,70,516	13,91,763	1,46,262	37,425	32,895	42,922	44,549	33,928	78,468
TOTAL ..	72,93,678	90,06,402	79,39,758	42,63,092	57,90,331	71,14,958	51,09,146	37,85,681	24,57,120	20,76,382

res were	Madras Inspection Branch.				Total value of stores charged on value inspected by Provincial Inspectorates.			
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
.. ..	6,33,590	8,04,066	8,41,026	7,61,770	2,49,02,542	3,25,76,778	3,60,19,564	2,65,83,845
partments—								
epartments—	..	..	..	..	..	768	756	..
epartments—	..	..	..	..	..	..	1,170	1,40,229
.. ..	..	..	..	..	1,91,93,778	2,89,05,872	1,92,80,575	1,55,95,266
ed ..	..	..	..	..	81,27,260	1,14,57,122	91,16,396	52,00,757
an States ..	..	..	..	..	40,618	1,42,828	1,39,553	1,02,178
ations ..	..	..	..	..	2,73,61,656	4,05,05,822	2,85,36,524	2,08,98,201
.. ..	..	..	..	..	364	1,64,248	2,47,054	4,45,236
.. ..	..	..	..	..	1,240	1,55,911	1,91,866	27,764
an States ..	..	..	..	..	7,55,994	12,702	72,694	17,377
public bodies	..	..	..	..	..	21,140	10,642	7,726
epartments	..	..	..	..	2,81,19,254	4,08,60,591	2,90,60,706	2,15,36,533
TOTAL ..	6,33,590	8,04,066	8,41,026	7,61,770	5,30,21,796	7,34,37,369	6,50,80,270	4,81,20,378

res were	Metallurgical Inspectorate, Tatanagar.				Total value of stores inspected and charged on valu			
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	R
.. ..	1,35,981	11,68,607	9,51,653	3,01,427	2,50,38,523	3,37,45,385	3,69,71,217	2,68,85
partments—								
epartments—	10,71,088	..	..	..	10,71,088	768	756	..
epartments—	..	..	..	..	..	..	1,170	1,40
.. ..	748	..	..	..	1,91,94,526	2,89,05,872	1,92,80,575	1,55,95
ed ..	..	..	..	..	81,27,260	1,14,57,122	91,16,396	52,00
an States ..	..	..	..	..	40,618	1,42,828	1,39,553	1,02
ations ..	748	..	..	..	2,73,62,404	4,05,05,822	2,85,36,524	2,08,98
.. ..	..	..	..	..	364	1,64,248	2,47,054	4,45
.. ..	..	..	..	..	1,240	1,55,911	1,91,866	27
an States ..	3,493	1,93,161	87,619	62	7,59,487	2,05,863	1,60,313	17
public bodies	..	..	..	..	..	21,140	10,642	7
epartments	10,75,329	1,93,161	87,619	62	2,91,94,583	4,10,53,752	2,91,48,325	2,15,36
TOTAL ..	12,11,310	13,61,768	10,39,272	3,01,489	5,42,33,106	7,47,99,137	6,61,19,542	4,84,21

(*a*) The figures include work done by the Cawnpore Branch.

APPENDIX XIV.

Statement showing inspection work carried out for various authorities which is charged on weight.

(*Vide* paragraph 44 of the Report.)

Authorities on whose behalf stores were inspected.	Calcutta Inspection Circle.				Bombay Inspection Circle.				Karachi Inspection Circle.				Total Provincial Inspectorates.				Metallurgical Inspectorate, Tatanagar.				Total tonnage of stores inspected and charged on weight.			
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.
	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.	Tons.
1. Central Government Departments, Civil ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2,145	71	..	..	2,145	71	..	..
2. Central Government Departments, Military	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	65	..	..	..	65	..
3. Railways, State-worked	17,940	16,602	27,330	47,186	591	80	200	2,199	2,210	4,600	274	2	20,741	21,282	27,804	49,387	30,641	64,192	81,871	31,799	51,382	85,474	1,09,675	81,186
4. Railways, Company-worked	20,229	23,123	6,577	61,197	..	..	..	..	..	..	..	..	20,229	23,123	6,577	61,197	57,598	62,735	37,720	25,983	77,827	85,858	44,297	87,180
5. Railways,—worked by Indian States ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	9	1,840	4,564	1,600	9	1,840	4,564	1,600
Total Railway Administrations	38,169	39,725	33,907	1,08,383	591	80	200	2,199	2,210	4,600	274	2	40,970	44,405	34,381	1,10,584	88,248	1,28,767	1,24,155	59,382	1,29,218	1,73,172	1,58,536	1,69,966
6. Provincial Governments	..	6	180	..	..	..	..	..	..	..	..	..	..	6	180	..	..	..	..	..	..	6	180	..
7. Public bodies ..	..	679	166	..	..	..	..	182	..	..	..	..	..	679	166	182	..	..	..	..	..	679	166	182
8. Private concerns and Indian States ..	1,545	2,836	3,512	2,058	..	..	..	115	..	..	..	..	1,545	2,836	3,512	2,173	85,856	1,65,443	1,62,986	1,37,029	87,401	1,68,279	1,66,498	1,39,202
9. Foreign Governments and public bodies ..	..	902	2,575	1,154	..	..	..	..	..	..	..	..	..	902	2,575	1,154	..	..	..	..	..	902	2,575	1,154
Total ..	39,714	44,148	40,340	1,11,595	591	80	200	2,496	2,210	4,600	274	2	42,515	48,828	40,814	1,14,093	1,76,249	2,94,281	2,87,206	1,96,411	2,18,764	3,43,109	3,28,020	3,10,504

APPENDIX XV.

Statement showing the number of tests and analyses carried out for various authorities.

(*Vide* paragraphs 52 and 57 of the Report.)

Authorities on whose behalf tests, analyses etc., were carried out.	Metallurgical Inspectorate, Tatanagar.				Government Test House, Alipore.				Government Test House, Bombay.				Total number of tests and analyses carried out.			
	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.	1928-29.	1929-30.	1930-31.	1931-32.
For the Indian Stores Department.	46	26	..	12	2,584	3,358	3,344	3,561	492	543	532	158	3,122	3,927	3,876	3,731
Outside authorities—																
1. Central Government, Civil.	3	12	2	..	184	281	197	270	..	2	..	..	187	295	199	270
2. Central Government, Military.	5	3	..	..	797	960	704	616	..	..	..	..	802	963	704	616
3. Railways, State-worked.	31	54	201	74	2,745	1,638	1,252	750	..	..	..	..	2,776	1,692	1,455	824
4. Railways, Company worked.	5	15	12	9	181	200	120	129	1	2	26	..	187	217	158	138
5. Railways, worked by Indian States.	8	..	1	37	31	26	29	78	..	..	..	..	39	26	30	115
Total Railway Administrations.	44	69	214	120	2,957	1,864	1,401	957	1	2	26	..	3,002	1,935	1,641	1,077
6. Provincial Governments.	11	20	9	8	344	309	466	548	3	..	..	..	358	329	475	556
7. Public bodies	..	..	..	..	512	100	173	115	..	..	..	..	512	100	173	115
8. Private concerns and Indian States.	3,194	5,162	6,842	6,205	1,755	1,556	2,343	1,825	21	6	3	6	4,970	6,724	9,188	8,036
Total ..	3,303	5,292	7,067	6,345	9,133	8,428	8,628	7,892	517	553	561	164	12,953	14,273	16,256	14,401

APPENDIX XVI.

Statement showing the various articles tested at the Government Test House, during the year 1931-1932.

(*Vide* paragraph 57 of the Report).

Serial No.	Articles.	Serial No.	Articles.
1	Acids.	36	Cells.
2	Accumulators.	37	Cement.
3	Aluminium.	38	Chains.
4	Aluminium sulphate.	39	Chalk.
5	Ammeter.	40	Chemicals.
6	Ammonium sulphate.	41	Clamps, M. S.
7	Antimony.	42	Clay, china, fire.
8	Apparatus, electrical.	43	Cleaners, metal.
9	Apparatus, flash point.	44	Coal.
10	Asbestos.	45	Coal tar.
11	Ashes, boiler.	46	Coke.
12	Asphalt.	47	Compositions, flooring.
13	Balance, analytical.	48	Compositions, tubing.
14	Balloons, rubber.	49	Concrete.
15	Barytes.	50	Copper, bars, rods, sheets.
16	Bases, pyridine.	51	Cordages.
17	Batteries.	52	Cotton.
18	Bauxite.	53	Crucibles, plumbago.
19	Beltings.	54	Decarbo.
20	Benzene.	55	Deposits.
21	Bitumen.	56	Dripping.
22	Blackings.	57	Efflorescence.
23	Blankets.	58	Electrolyte.
24	Bolts and nuts.	59	Extinguishers, fire.
25	Braids.	60	Fabrics, cotton.
26	Brass, bars, rods and sheets.	61	Fabrics, woollen.
27	Bricks.	62	Fans and regulators.
28	Bronze.	63	Files of sorts and sizes.
29	Buckets G. I.	64	Fittings, electrical.
30	Buttons metallic.	65	Fittings, vacuum brake.
31	Cables.	66	Gauges, pressure, steam and vacuum.
32	Cakes oil.		
33	Calcium carbide.	67	Glass.
34	Candles.	68	Glue.
35	Canvas, cotton, flax and jute.	69	Gold.

Serial No.	Articles.
70	Graphite.
71	Grease.
72	Gum.
73	Hooks, drawbar.
74	Hydrometer.
75	Indicators, steam engine.
76	Insecticide.
77	Insulators.
78	Iron, angles, bars, plates.
79	Jars, stoneware.
80	Knives.
81	Lamps, electric.
82	Lead.
83	Leather.
84	Lime.
85	Meggar testing set.
86	Metals antifriction.
87	Metals, type.
88	Meters, electric.
89	Mortar, masonry.
90	Newar, cotton.
91	Nickel.
92	Oil, creosote.
93	Oil, fuel.
94	Oil, kerosene.
95	Oil, lubricating.
96	Oil, vegetable.
97	Padlocks.
98	Paints and pigments.
99	Paints remover.
100	Petrol.
101	Pipes, asbestos.
102	Pipes, concrete.
103	Pipes, hose, canvas.
104	Pipes, hose, rubber, armoured and plain.
105	Pipes, steel.
106	Pipes, stoneware.
107	Pitch.
108	Plugs, fusible, boiler.
109	Plumbago.
110	Polishes, leather.
111	Polishes, metal.
112	Powder cooking.
113	Preservatives wood.
114	Putty.
115	Rails.
116	Rail joints.
117	Ropes metallic.
118	Ropes non-metallic.
119	Rosin.
120	Sajimati.
121	Salt.
122	Sand.
123	Scissors.
124	Screw-couplings.
125	Sealing compound.
126	Seeds, castor and mowah.
127	Sewage.
128	Shackles.
129	Shellac.
130	Sheets, corrugated, asbestos.
131	Sheets, corrugated G. I.
132	Sheets, corrugated M. S.
133	Sheets, corrugated I. R.
134	Sheets metal protected.
135	Sleepers, Railway steel.
136	Sludge.
137	Soap.
138	Solder.
139	Spirit.
140	Steel, angles, bars, plates etc.
141	Stone.
142	Tallow.
143	Tapes cotton.
144	Thermometers.
145	Threads.
146	Tiles.
147	Tin.
148	Turpentine.
149	Twines.
150	Valves, hydraulic.
151	Varnishes.
152	Volt-meter.
153	Voltoids.
154	Water.
155	Wax, bees and sealing.
156	Wires.
157	Wood fuel.
158	Yarns.
159	Zinc, drillinggs, inots, etc.

APPENDIX XVII.

Financial statement of the Receipts and Expenditure of the Indian Stores Department for the years 1928-29, 1929-30, 1930-31 and 1931-32.

(*Vide* paragraphs 8 and 74 of the Report.)

Particulars.	1928-29.	1929-30.	1930-31.			1931-32.		
			Commercial.	Non-Commercial.	Total.	Commercial.	Non-Commercial.	Total.
	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.	Rs.
				RECEIPTS.				
1. By 1% purchase charge ..	3,39,403	4,17,143	4,52,794	..	4,52,794	3,47,185	..	3,47,185
2. By 1% inspection charge ..	2,39,323	3,35,024	3,70,761	..	3,70,761	2,69,631	..	2,69,631
3. By recoveries on account of fees for tests, inspections, etc., made from Government Departments, Railways, private firms and individuals	7,11,977	9,64,185	6,95,298	1,05,736	8,01,034	6,17,281	99,626	7,16,907
4. By Miscellaneous receipts ..	33,140	55,880	35,070	941	36,011	40,750	739	41,489
Total Receipts ..	13,23,843	17,72,232	15,53,923	1,06,677	16,60,600	12,74,847	1,00,365	13,75,212
				EXPENDITURE.				
1. Pay of Officers	7,26,025	7,01,283	6,26,585	1,31,710	7,58,295	6,02,757	1,38,823	7,41,580
2. Pay of Establishment ..	6,63,837	7,01,131	5,68,409	1,53,726	7,22,135	5,67,728	1,60,478	7,28,206
3. Allowances	1,97,378	2,04,216	1,99,488	30,057	2,29,545	1,66,849	24,383	1,91,232
4. Grants-in-aid	600	600	3,975	470	4,445	408	192	600
5. Supplies and Services—								
(a) Expenditure in India ..	1,35,971	1,93,299	..	..	1,55,070		..	74,902
Deduct amount treated as Capital Expenditure, etc.	8,663	18,342	..	..	5,672	..	..	1,781
Total ..	1,27,308	1,74,957	..	..	1,49,398	..	..	73,121
(b) Expenditure in England	..	..	..	..	604	..	..	..
Total Supplies and Services (excluding amount treated as Capital Expenditure)	1,27,308	1,74,957	1,04,965	45,037	1,50,002	38,154	34,967	73,121
6. Contingencies	1,14,171	1,10,311	93,138	24,146	1,17,284	73,505	22,436	95,941
7. Works (including Petty Constructions and Repairs) ..	36,097	78,807	..	..	17,772	..	..	9,567
Deduct amount treated as Capital Expenditure ..	20,831	68,256	..	..	7,587	..	..	108
Total ..	15,266	10,551	6,853	3,332	10,185	6,905	2,554	9,459
8. Loss or gain by exchange (included with the cost of stores in the Profit and Loss Account)	89	48	..	..	50	..	..	..
9. Total direct Expenditure charged to Indian grant (excluding expenditure in England	18,74,168	19,89,695	..	..	20,04,596	..	..	18,42,028
Deduct amount treated as Capital Expenditure and Loss or Gain by Exchange	29,583	86,646	..	..	13,109	..	..	1,889
10. Net direct expenditure ..	18,44,585	19,03,049	16,03,413	3,88,478	19,91,287	14,56,306	3,83,833	18,40,139
11. Expenditure on stores in England not treated as Capital Expenditure, [item 5 (b)] ..	..	..	..	..	604	..	..	..
12. Leave salary and overseas pay paid in England ..	31,072	47,358	64,567	19,796	84,363	83,282	29,483	1,12,765
13. Pensionary charges ..	1,15,959	1,21,163	75,108	12,151	87,259	70,740	11,792	82,532
14. Government Contribution to Provident Fund	41,957	42,766	40,295	9,526	49,821	36,113	13,708	49,821*
15. Interest on Capital Outlay ..	53,356	60,029	28,609	37,596	66,205	28,874	38,140	67,014
16. Depreciation charges ..	22,444	21,998	15,207	13,347	28,554	14,968	13,122	28,090
17. Stationery and Printing ..	40,589	38,436	32,432	6,432	38,864	30,515	6,970	37,485
18. Cost of Audit and Accounts	2,30,683	2,22,875	2,22,838	24,760	2,47,598	2,06,619	22,958	2,29,577
19. Expenditure on retrenched personnel	..	..	..	..	..	572	9	581
20. Services rendered by the Non-Commercial Branches of the Department to Commercial Branches	..	..	66,061	—66,061	..	69,946	—69,946	..
Total Expenditure ..	23,85,625	24,57,674	21,48,530	4,46,025	25,94,555	19,97,935	4,50,069	24,48,004
Deficit	10,61,782	6,85,442	5,94,607	3,39,348	9,33,955	7,23,088	3,49,704	10,72,792

* Excludes Rs. 40,351 being arrear Government Contribution for previous years adjusted in the accounts for 1931-32 on [illegible] of India sanction.

APPENDIX XVIII.

Statement of the work done by the Indian Stores Department, year by year, since its constitution.

(*Vide* paragraph 8 of the Report).

Year.	Value of textile stores and leather good purchased.	Value of Engineering and miscellaneous stores purchased.	Total value of stores purchased.	Amount of store inspected and charged on value.	Tonnage of stores inspected and charged on weight.	Tests and analyses carried out.	Total fees earned.
	Rs.	Rs.	Rs.	Rs.	Tons	Nos.	Rs.
1921-22 (January-March 1922)	59,27,330	..	59,27,330	..	..	..	59,273
1922-23	1,64,78,305	..	1,64,78,305	1,42,79,333	107,648	5,744	4,42,168
1923-24	1,17,08,745	50,15,636	1,67,24,401	2,21,45,403	171,797	7,364	6,20,742
1924-25	1,33,26,953	1,25,84,188	2,59,11,141	2,13,73,382	251,760	9,989	8,57,941
1925-26	1,18,81,516	1,47,86,417	2,66,67,933	3,98,78,885	292,550	9,932	11,08,043
1926-27	1,62,86,293	2,35,95,952	3,98,82,245	5,19,88,643	336,368	12,354	15,01,075
1927-28	1,18,82,009	2,54,22,663	3,73,04,672	5,71,10,815	331,628	13,065	15,72,158
1928-29	1,16,24,973	2,44,23,101	3,60,48,074	5,42,33,106	218,764	12,953	12,92,698
1929-30	1,13,36,292	3,15,89,409	4,29,25,701	7,47,99,137	343,109	14,273	17,33,302
1930-31	98,37,157	2,78,45,539	3,76,82,696	6,61,19,542	328,020	16,256	15,59,697
1931-32	1,06,14,978	2,53,85,028	3,60,00,006	4,84,21,867	310,504	14,401	13,20,790
Total from 1st January 1922 to 31st March 1932 ..	13,09,04,551	19,06,47,953	31,15,52,504	45,03,50,113	2,692,148	116,331	1,20,67,987

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